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AMERICAN Cinematographer

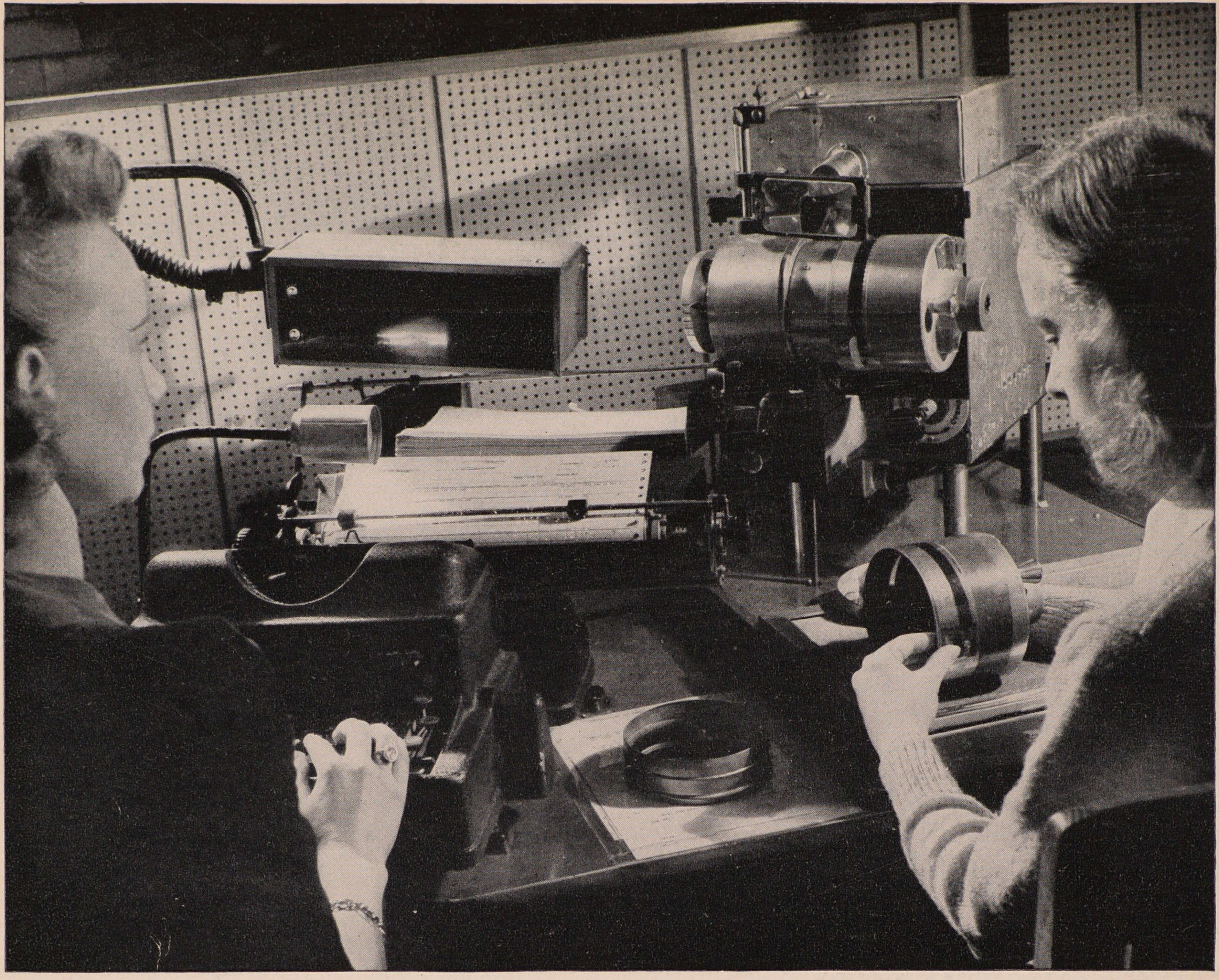
★ THE MOTION PICTURE CAMERA MAGAZINE ★

In This Issue . . .

Films Soldiers Want

Lapse-Time for the Amateur

November 1943



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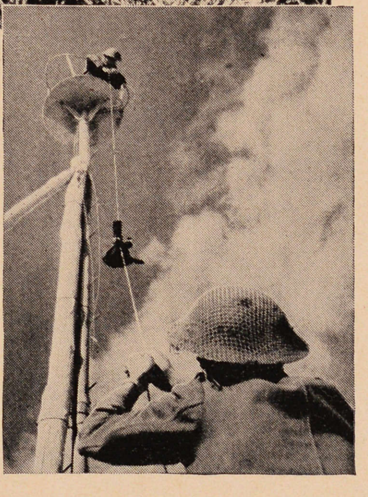
↑ **1.** British Army cameraman filming bombardment in Libyan battle zone—protected from surprise attack by a Bren gunner.

2. Eyemo goes aloft. Cameraman climbs to bird's-eye view on observation post in Tobruk and hoists his equipment up after him. →

← **3.** The man and his weapon. He fights alongside his buddies as a regular soldier—and does the extra job of filming battle actions. Many of these men have long civilian experience as news photographers or in British and American film studios.



All pictures courtesy of Official British War Film "Desert Victory," released through *20th Century-Fox.*

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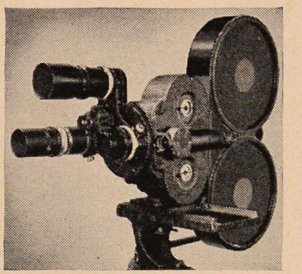

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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE **CAMERA** MAGAZINE

VOL. 24 NOVEMBER, 1943 NO 11

CONTENTS

Production Still of the Month.............. *By* JAMES N. DOOLITTLE 394

Films Soldiers Want.......................... *By* PVT. PETER FURST 395

Lapse-Time for the Amateur.................. *By* COOPER JENKINS 396

Cinematographers Responsible for Agent's Success........................... *By* LEON O. LANCE 398

Invaders Learn to Surrender........... *By* DR. DIMITRI MARIANOFF 400

Matching Lens Diaphragm Settings.............................. .... *By* CHARLES H. COLES, 2ND LT. A.C. 401

Diary of a 10-Year Movie Maker.............. *By* JAMES R. OSWALD 402

Electronics in Photometry....... *By* G. B. HARRISON, PH.D, F.R.P.S. 404
(Courtesy of Journal of the British Kinomatograph Society)

A.S.C. On Parade... 406

Improving Amateur Projection Technique........ *By* F. C. MOULTRIE 410

Among the Movie Clubs.. 412

The Front Cover

This month's cover shows Cinematographer Victor Milner, A.S.C., and Director Cecil B. De Mille 45 feet in the air on a camera boom shooting a scene for "The Story of Dr. Wassell." The scene represents a section of the waterfront at Tjilatjap, Java. The film stars Gary Cooper.

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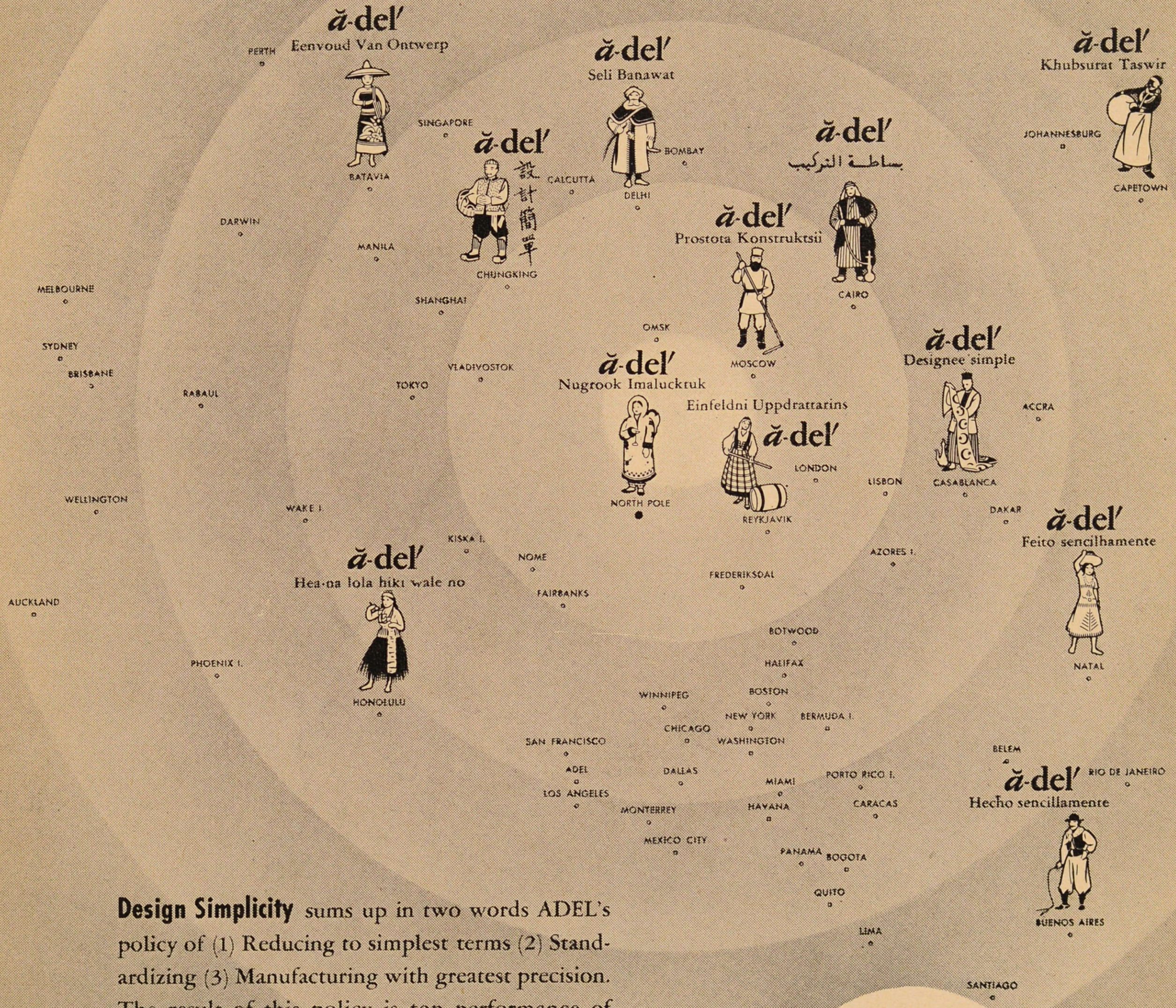

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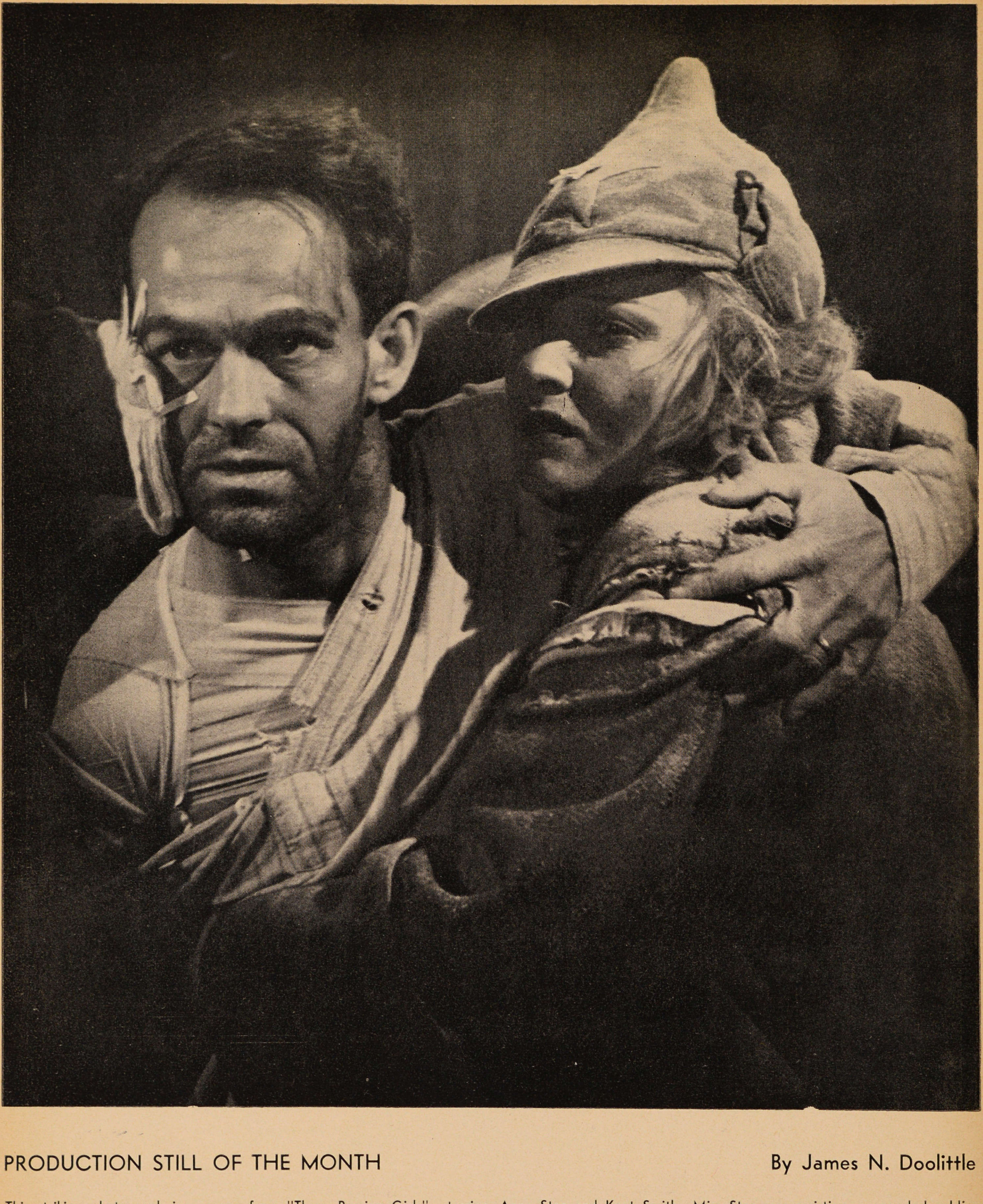


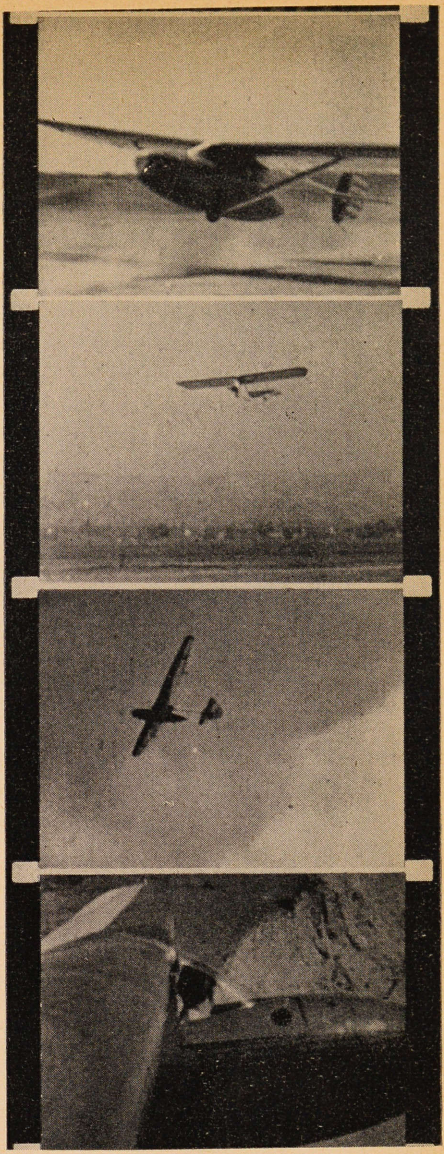
PRODUCTION STILL OF THE MONTH

By James N. Doolittle

This striking photograph is a scene from "Three Russian Girls", starring Anna Sten and Kent Smith. Miss Sten was assisting a wounded soldier (Jack Gardner) from a field hospital being bombed when Mr. Doolittle got the shot. "Three Russian Girls" will be released by United Artists. It is a Gregor Rabinovitch production. It was directed by Fedor Ozep and Henry Kessler. Eugene Frenke was associate producer, and John Mescall, A.S.C., photographed it.

Films Soldiers Want

By PRIVATE PETER FURST, U. S. A.



A FOOT-WEARY platoon of Medical Department soldiers, this writer among them, was pitching tents under the burning noon-day sun in a Texas bivouac area. The men were carrying full field equipment, gas masks, pistol belts, water canteens, full packs, steel helmets. They had marched twelve miles that morning through dusty terrain, the sweat from their bodies forming an almost solid cake with the dirt from the road.

Periodically, when the going got too rough, they had torn off their helmets and poured the warm water from their canteens over their heads. They hadn't taken much of this water, even though they were thirsty, because before they left that morning at six, the lieutenant had put two salt pills into their canteens. Their breakfast, after an hour's marching, had consisted of the army's celebrated K ration, "dog biscuits," a fruit bar, coffee powder, concentrated egg yolk and pork, and the men weren't used to that kind of diet. By the time they had finished their lunch, also K ration, and had gone through an afternoon of tear gas attacks, litter bearing, collecting "wounded" off an imaginary battle field, bandaging "broken" bones and more gas attacks, the men dropped where they stood and went to sleep. These men, mind you, weren't "old" soldiers. They were green—rookies—and for most of them this was the toughest day they had ever had in their lives.

But when someone yelled, "Mail," and the truck from camp drew up with the men's letters from home, these soldiers came alive faster than on a Saturday afternoon when the passes are given out at the company office for the nearby town.

Thus, if you made up a list of the things that go toward keeping up the morale of the American soldier training for battle, his mail from home would be way up at the top. Second in importance, without a doubt, as a morale factor, is entertainment. Mail is the main link between the soldier and his home—his family, his girl, his friends. Mail and entertainment together form the soldier's link with the life he will someday return to, and possibly sooner than he expected when he entered the army.

One could talk, perhaps, for hours about mail and what it means to the soldier, how he feels when he stands in line for a letter from home, hearing everyone's name called except his own. But this is a magazine mainly concerned with the motion picture business, and therefore this article will concern itself with entertainment.

Anyone who has ever been to a Saturday afternoon matinee in a neighborhood theater can easily imagine what goes on in an army camp theater. The men yell and whistle and laugh like a bunch of kids, the day's worries and hard work forgotten completely. Because, on the screen, before their eyes, they see the things they dream about. They see the girls they used to go out with—a little more beautiful, a little more sophisticated, perhaps, but still their girls—, they see their home towns and themselves walking along the street. That boy on the bench with the pretty blonde in his arms, that's you, soldier. The fellow in the smart, gray flannels, that's you too—or will be, soon, we hope. And in a war film—that guy at the controls of a Fortress, that might have been you, soldier, if the army hadn't decided otherwise.

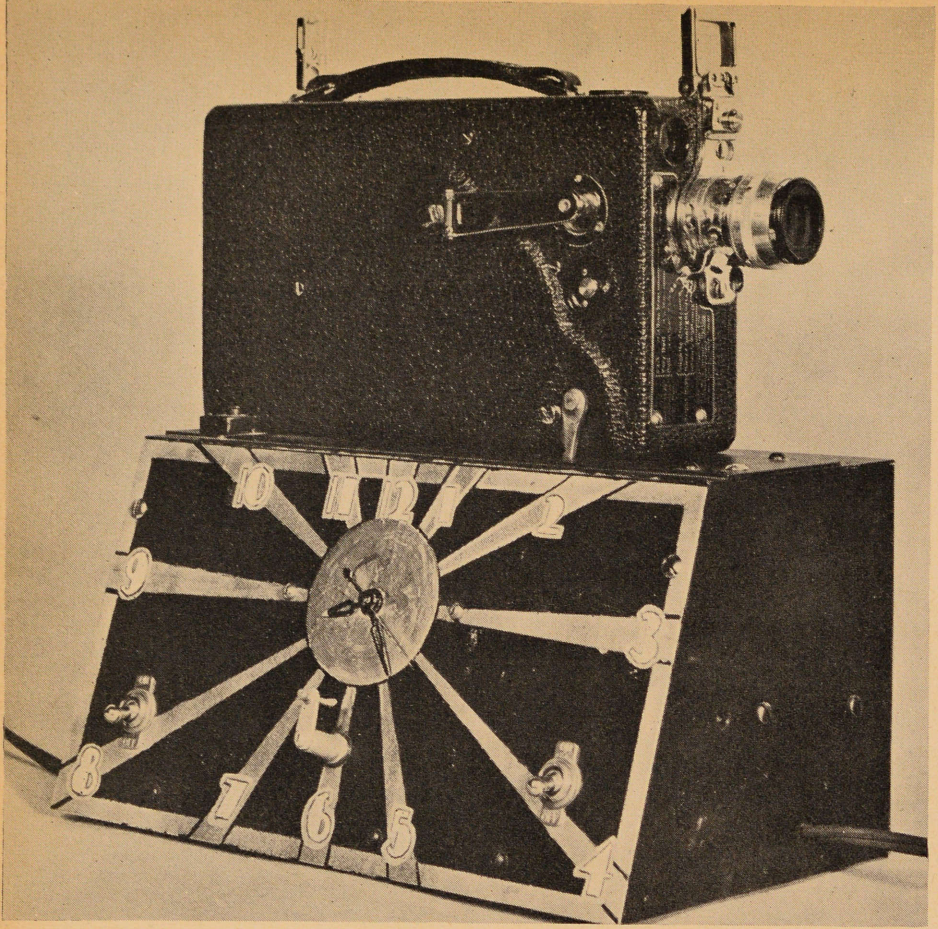
Some of this might make him, the individual soldier, feel a little homesick, but that's really the way he wants it. He wants to be reminded, that's why he talks about home at the PX, on a march, in the barracks. That's why listening to some song on the radio, or the mention of his home town, or, for that matter, even of his home state, makes him feel a little sad and lonely. Quite apart, of course, from all that, he wants desperately to be entertained. He wants, if possible, to forget about the dust and dirt, and orders and reveille and full packs on his aching back.

This however, should not be taken as an indication that the men training for the battles of tomorrow do not want to see a good, rip-roaring war film. Even though there again they may see the dust and dirt of their own drill fields, it is others that are doing the working and the sweating, and it makes them feel good. The civilian movie makers should hear the howls of delight that go up when the soldiers in the army camps see other soldiers on the screen on KP or drilling on a dusty field or marching along a road with full field equipment.

But this writer, as much as a buck private as a former Hollywood correspondent, would just once like the movie maker who put out those comedies about "army life" hear the yells and hisses and cynical laughter in the post theaters when Hollywood's version of life in Uncle Sam's army doesn't quite meet with the men's approval. You can't kid a soldier about army life. Why, he will ask, doesn't that character on the screen get a hair cut? Why, on this post he'd be on KP three days straight with hair like that. And how about that fellow's sergeant's stripes? How'd he get 'em so fast when it takes us GI's months even to make Pfc? And how is it they get furloughs and passes so easily and their girls or someone else's are always around, and they always get to meet a pretty skirt so easily?

And why the devil is guard house always treated as a joke when the army authorities, charged with the job of making disciplined soldiers out of easy-going civilians, are always trying to impress us with the extreme seriousness of breaking army rules and regulations? A court-martial isn't funny—it's darn tragic, and might mean a lot more than merely a few days or weeks in the guard house. It might mean a dishonorable discharge, a ruined life, shame. There have been films in which every conceivable army regulation was broken; in which soldiers went AWOL; damaged government property; sang and danced and generally raised hell in their barracks—in other words, did not act like soldiers at all, but like a bunch of South Sea islanders who had never heard of discipline or army regulations.

(Continued on Page 406)



Left, the 16mm camera, with extended trigger, mounted on the lapse-time device, ready for action.

Lapse-Time for the Amateur

By COOPER JENKINS

LAPSE-TIME is one of those processes which has its definite place in industry but its counterpart is sheer enjoyment, novelty and entertainment, when placed in the hands of the amateur. It is inexpensive and fascinating.

As a serious amateur interested in movie photography, you probably have wondered many times about the miracles of lapse-time movies but you did nothing about it because you thought it was a realm for the rich guy. That's where you made your mistake.

Sure, there are several "store-bought" ways of photographing storm clouds gathering and rose buds opening, and you are right in thinking most of these gadgets are for the higher priced cameras which few of us can afford . . . but there are other ways of shooting lapse-time that *are* within our means.

What is Lapse-Time Photography?

Briefly, what lapse-time photography amounts to is this . . . The photographing of an action which requires a long time to complete, with a *time-lapse* between exposures. Then, when projected at normal speed the action will be stepped up so that it is completed in a matter of seconds on the screen. It is the *opposite* of slow motion.

The length of this time-interval between exposures is determined by (1) the length of time required for the action to be completed, and (2) the speed with which the action should take place when projected.

To accomplish this, a lapse-time device should provide a mechanical means of operating the camera in such a way as to make single-frame exposure, and a method of pre-setting the time-interval between exposures, such as one frame per second, one frame per minute, etc. . . . Another feature that is desirable but not entirely necessary is an electric switch in connection with a photoflood to provide a momentary illumination of the subject only during the time of the exposure. This feature is a life saver for photofloods as there is no need of the light burning during the interval between exposures.

An Experimental Model For Shooting Lapse-time

The camera used by the author in making his lapse-time experiments was an Eastman, Model K, which does not have the benefits of a "single-frame button." However, by quickly pressing and releasing the starting lever a single exposure results. To make this quick action easier a two inch extension, resembling a trigger, was added to the original starting lever. This trigger extends down into the housing that contains the timing mechanism. The camera is secured to the housing with a tripod screw. On the panel of the housing is an inexpensive self-starting electric clock which governs the time-lapse between exposures. This is done by a simple brushing contact between the second hand and a contact point located at the figure six on the dial of the clock. Obviously, this timing arrangement is limited to action requiring one or more exposures per minute, the actual time-lapse being determined by the number of contact points around the dial.

When the second hand touches the contact point a small source of electricity supplied by two flashlight batteries closes a relay which allows 110 volts to actuate the solenoid. This relay circuit prevents the contact points on the dial of the clock from burning out.

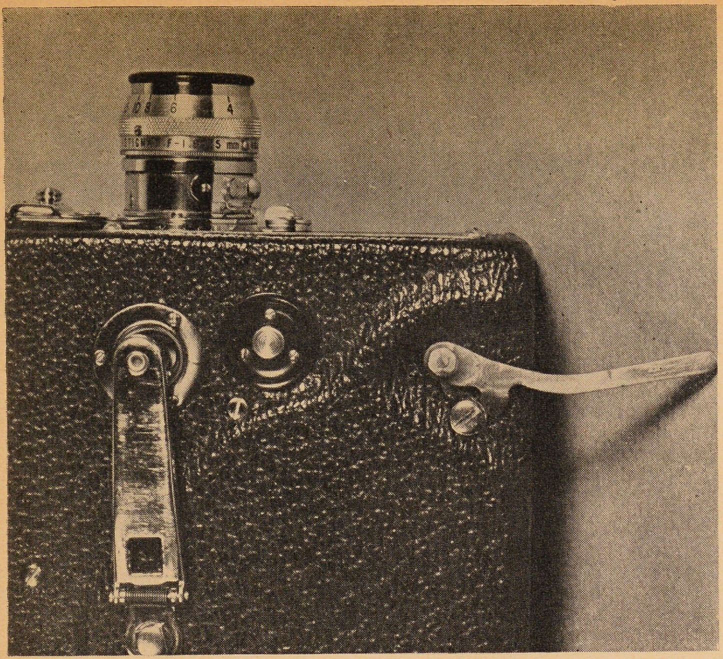
The solenoid, when so charged, draws a lever past the long trigger fast enough to allow just one frame to be exposed. The spring motor in the camera is, of course, wound tight at the beginning of each experiment. As soon as the lever leaves its resting position it closes a micro-switch causing a No. 2 photoflood to illuminate the subject being photographed. The light remains on only for a second or two (till the lever returns) during which time the actual exposure takes place. (Consistant illumination for each frame is extremely important, however when outdoor subjects are being shot in good even light, there is no need for artificial illumination.) After the exposure is made a rachet permits the lever to slide past the trigger, back to its normal position.

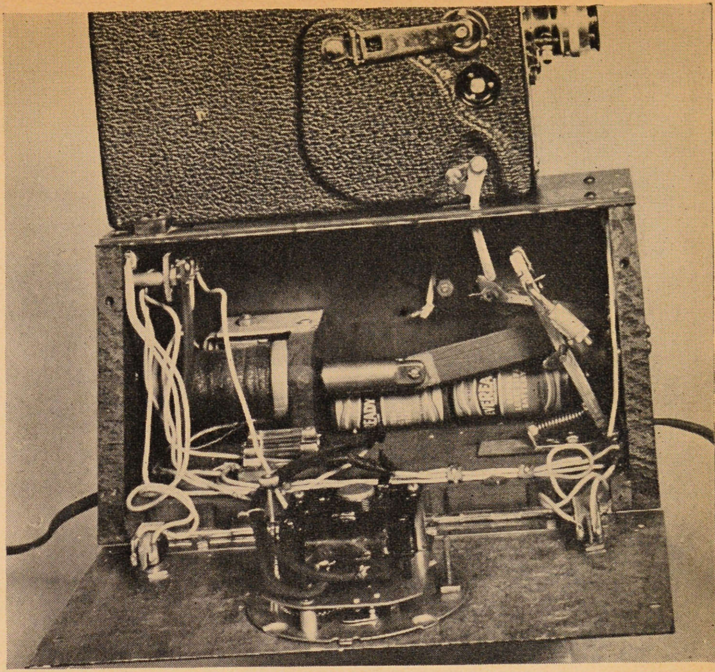
Beside the clock there are two switches on the panel. One is the master switch which turns on the entire mechanism including the clock. The other switch turns on the photoflood only, for lining up the subject, focusing and taking light readings. On the back of the housing a push button manually closes the armature of the relay so that test exposures may be made without waiting for the second hand of the clock to get around to the contact position. This is a time saver.

The lapse-time model shown in the photograph is capable of producing many interesting sequences, but it is strictly an experimental model. A great improvement would be a more versatile timing system entirely separate, leaving only the actuating mechanism (remotely controlled), connected to the camera.

Shooting a Typical Lapse-time Subject

A variety of intriging subject matter is at hand for the lapse-time enthusiast, and most of these subjects are outside the forbidden realm of restrictions imposed by wartime regulations. To get off to a good start let's photograph the unfolding of a rose bud . . .





Upper left, "To make this action easier a two-inch extension, resembling a trigger, was added to the original starting lever." Upper right, interior of experimental lapse-time model showing relative position of solenoid, lever, trigger and clock. Right, Fig. 1 shows trigger, lever and solenoid armature in resting position between exposures. Micro-switch is in "off" position. Fig. 2 shows position of trigger and lever with solenoid armature at extreme end of its pull. Micro-switch is now "on" and exposure is being made. Fig. 3 shows armature and lever returning to normal resting position. Micro-switch is about to go "off". Note ratchet action at end of lever allowing lever to slide past trigger.

First thing to do is to set the camera and timing device on a firm tripod, table or bench and secure it rigidly. Line up the camera and focus on a "stand-in" of some kind, similar in size to the subject you will later set before the camera. The reason for the "stand-in" is that when a fresh bud is brought from a cold refrigerator into a warm room, it immediately begins to unfold, and if it is used to focus on in the warm light of a photoflood there is likely to be some action in that first minute or two that the camera will miss. Don't bring the bud in till you are ready to start shooting. The bud should be placed on a separate table or stand from the camera in order to limit its vibration to a minimum.

Now comes the pencil work. You have to establish the amount of time the rose bud will require to fully open, and then decide how long you want this action to take when you project it on the screen at the rate of sixteen, (or twenty-four) frames per second.

For example, say it takes a tight bud about ten hours to open. If you shoot one frame per minute for ten hours you will expose 600 frames, or fifteen feet of film, which at normal silent projection speed can be screened in about thirty-seven seconds. If you want the action faster shoot one frame every two minutes and see the same action in about eighteen seconds. A flexible timing device provides a great variety of possibilities.

Now that all calculations have been made and the time-interval determined, bring in the rose bud (in water, of course,) and place it in the exact position of the "stand-in," take the usual meter reading and turn on the switch for the mechanism to go to work. That is all you have to do till the flower has finished its performance.

Another subject inviting to the lapse-time photographer is the formation of storm clouds, and best among these are the thunderheads. With the naked eye it is possible to observe the turbulent action taking place within the cloud but it is infinitely more impressive when the action has been stepped up to four times its normal speed. This action is much faster than plant growth and must be photographed with considerably less time-lapse between exposure. Most cloud formations are best shot at from one to four frames per second . . . and will produce amazing results on the screen.

Some of the simplest things produce unexpected but welcome results. The writer once photographed a burning cigarette that was supposedly placed on a living-room mantel and forgotten. This action took about eight minutes and the time-lapse between frames was three seconds. Shot in Kodachrome, it produced some unexpected results in that it showed the resin melting around the cigarette as it charred its way along the pine board.

An easy subject on which to test your equipment right in your own living room or work shop is an old fashion tallow candle. Secure the base of it into the neck of a bottle and light the candle allowing the tallow to drip down the sides of the candle and bottle till the candle is expired. When this film is projected it will show the candle rapidly becoming shorter as the melted tallow builds its shapeless formations. This natural action is interesting to observe in reality but when stepped up by the lapse-time camera it becomes extremely fascinating.

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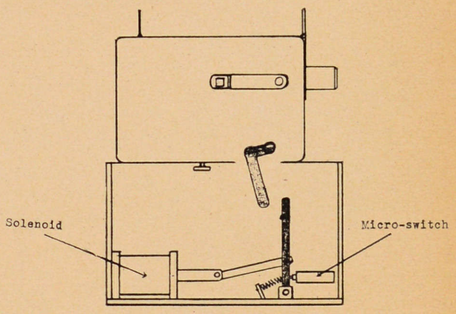


Fig. 1

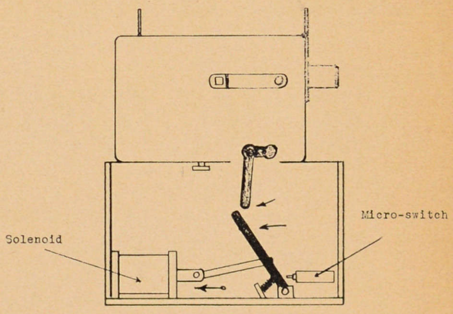


Fig. 2

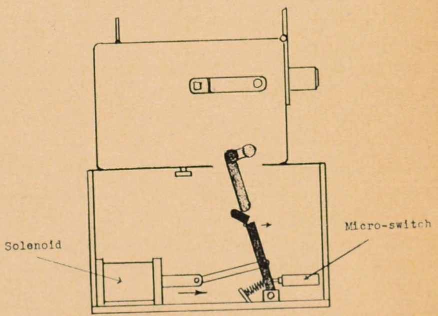
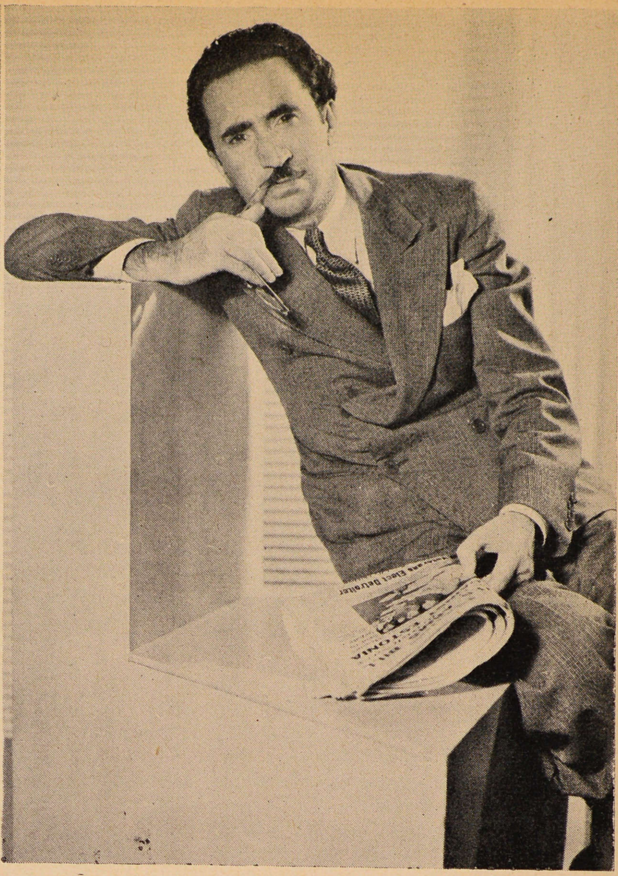


Fig. 3



At left is Early Cantrell, discovered by the author while doing an outstanding role at the Pasadena Playhouse. She has dark auburn hair, and will soon be given a screen test. Lance expects her to get a contract for he says he knows that any of Hollywood's Cinematographers will successfully transfer her ability, beauty and peronal charm to the screen. Above is the author.

Cinematographers Responsible For Agents' Success

By LEON O. LANCE

MY business is finding new talent for the screen, and then presenting that talent to motion picture producers. I also represent players who are already recognized. I'm what Hollywood calls "an agent."

There are a lot of us agents in Hollywood, because it is practically impossible for a player to obtain a role or a contract with a motion picture company unless he or she has an agent to speak for him or her. A player can't very well walk into a producer's office and brag about himself; tell what a great actor he is. Likewise, a new player who has never faced a camera can't tell a producer what a great future he has, and that the producer is missing a great bet if he doesn't give him a screen test. So, that's why the agents are necessary.

And speaking of screen tests, that's why I am writing this article for the CINEMATOGRAPHER. I, as a Hollywood agent, want to tell the world that Hollywood's top cameramen are really responsible for ninety per cent of the success of any Hollywood agent. In the hands of the cinematographers lies the success or failure of any agent in putting a new face on the screen, for it is these men who make the tests which generally decide whether or not the new player gets a contract or a role in a picture.

I don't believe that agents a a whole realize what they owe the cameramen. Most agents, after they have secured a term contract for a new discovery, go back to their offices with smiles of self-satisfaction on their faces and tell their friends, "Well, I put over a big deal today. I sold a brand new girl to such and such a studio on a seven-year contract."

What the agent should do is look up the cameraman who photographed the test of his discovery and say, "Buddy, I can't tell you how much I appreciate the great work you did in testing my client. *Your* work got that young girl a seven-year contract, and I'll get ten per cent of her earnings during the life of that contract. But *you*, not I, are responsible for that contract, Buddy. Sure, I found the girl and had faith in her ability, but if you hadn't put her on the screen in the way you did she would be taking a train back to Podunk tomorrow."

I, in particular, am extremely grateful to the Hollywood cameramen, for they have meant a great deal to me inasmuch as I am constantly seeking new faces. In fact, I get more satisfaction out of bringing new personalities to the screen than I do out of just getting more jobs for established players. Consequently, I therefore lean more heavily on the art of the cinematographers than if I didn't bother to bring out new talent. Let me say here and now that the cameramen have never let me down. Whenever I had a new player whom I felt had ability and secured her a screen test, that test has always been beautiful.

Testing a newcomer who has never been in front of a camera before is a bit more difficult than photographing a player who is camera wise. The newcomer naturally is nervous, doesn't know just what she should do with her hands, how she should walk or turn her head. She has heard so much about screen technique that she is sure she is doing the wrong thing. So, if he wants to do a good job, the cameraman has to be doubly careful in lighting and other details. In other words, he must have the desire to make this new girl look her best. I find that cameramen are all anxious to see a newcomer make good, and they really *give out* to give the newcomer a chance. I have also seen cameramen take a new player aside and quietly talk to her until her nervousness disappeared.

After a player is signed to a contract the agent still depends upon the cameraman for her continued success. A good screen test will get a new player a job, but it is still the cameraman who has a great deal to do with her keeping that job, for the girl must continue to look glamorous in all her pictures. It is the cameraman who attends to that while the agent smiles and collects his commissions and forgets all about the man whose art means so much to the player's and the agent's success.

Many have been the women who can thank the cameramen for their glamour. There are many feminine stars who in real life do not look glamorous, but on the screen they are simply gorgeous, due to the ability of a cameraman to devise the lighting that will hide their defects and bring out the charm of the actress. That is why some actresses insist on having the same cameraman photograph them in every picture in which they appear. Age creeps up on actresses just the same as on women in any other walk of life, but Hollywood's cameramen have a way of keeping the stars looking young. And don't think this doesn't mean something to the agents. If an agent has a star getting $5000 a week that means $500 a week income for that agent. Shouldn't he be grateful to a cameraman who by his lighting skill can prolong the screen life of that client by many years? When a double chin begins to be visible on a leading man, and the cameraman can continue to wipe it out by his lighting, shouldn't that agent feel that his success lies in the hands of the cameraman?

Only recently a former feminine star came back to films after many years ab-

(Continued on Page 417)

Upper left is Laurie Hayden, another Lance discovery. She, too, will soon face the cameras for a screen test, and Lance says he has faith in both her and the cameramen, so expects her to get a contract. Upper right is red-headed Peggy O'Neill, under contract to Charles R. Rogers. Lance discovered her, but Rogers didn't bother with a test for he said he has enough faith in Hollywood's Cinematographers to know they'll keep her glamorous. Lower right is Jeanne Newport, also under contract to Rogers. She is said to have a sensational singing voice, but not until she had been screen tested was she signed. She is grateful to the cameraman who photographed her.

Invaders Learn to Surrender

By DR. DIMITRI MARIANOFF

THE enormous power of the American film industry has been almost entirely unhampered by this war. Entertainment pictures of all kinds, big propaganda features, training and documentary films are a part of the war effort, a part of our constructive policy down the entire line of our national culture. It is remarkable how at this time of war, which takes all our attention and strength in the struggle against the diabolic aims of the enemy to destroy human value, we hold safe our spiritual Front for farther development of our science, technique and art.

Although the European countries have always worked toward the development and growth of their own film productions, still they have shown enthusiasm and respect for ours—the pictures from Hollywood. True, we also have applauded many European motion pictures, and already after War I we used to invite various great actors and directors of Europe to our film capital.

An amazing thing happened after the war. America, master of a great technical event was praising European pictures; good natured Americans were sincere in their nearly childish enthusiasm for things that appealed to them. European producers and directors quickly responded to this American sentiment, and they, as many people believed, "invaded" American film production. But only the near-sighted were those who took that for granted. The fact is that in the Twenties, German, Russian, Swedish, Austrian and other producers took the lead and established themselves as outstanding and successful *American* film-makers. Yes, American—not European. They have lost their European attitude and have "surrendered" to the American way of life.

We witnessed the greatness of American spirit that generously gave place to those who wanted to create on our soil. Many of them have been with us now for years. They have adopted our attitude toward life, creativeness, ideals and traditions, and we have gladly "naturalized" them. If their work were an example of foreign culture only, they would remain strange to us and isolated, but they have lost their foreign coloring and became members of our American family.

German pictures made up the majority of the European films that came to America after the World War. Germany tried to impress all the countries with her "high" culture, to break the cold-shoulder-feeling of their former enemies, and sent her best films to us. Seeing the pictures of Lubitsch, Murnau, Dupont, Von Stroheim and others, we were enthusiastic about their great artistic and technical effect. Those pictures made the eyes of our American directors turn toward reality, reminded them of what glorious a medium they had in their hands, and what they could do with it.

Then came fine French pictures such as "J'accuse" and "Passion of Joan of Arc." Russia started sending her profound and brilliant productions. From 1919 to 1929 there was the gigantic boom in American life and American motion pictures reflected it. But reasonable voices began to protest to the contents of our pictures. Some of them succeeded and influenced a new type of film, but only in 1929 with stock crash and depression, when millions of people became victims of closed banks came a new era. People awakened to their senses.

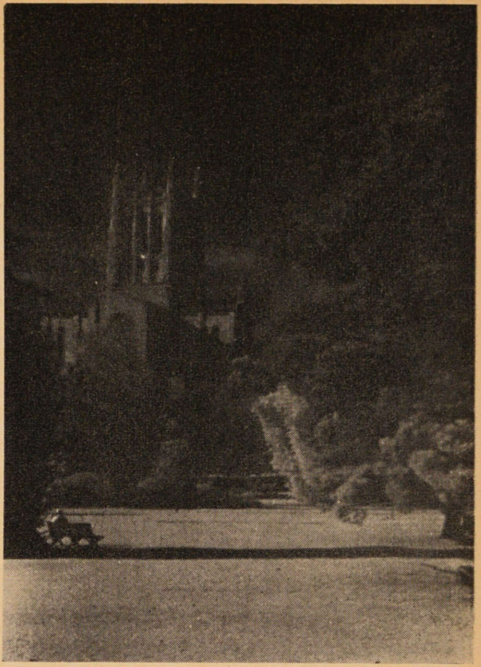
After an era of fundamental influence by European productions, and admiration for Continental tendencies, the American industry steadily began to search for its new way back to common American sense.

Foreign stimuli, such as underlining of lust, greed for luxury, adoration of gangster heroism began to vanish from the American screen. This nation's sound thinking reared up against very obvious germs of poisonous intoxication—a most natural result of its overfeeding with un-American doctrines.

Now what about European films today? They have lost their effect upon Hollywood movie makers, because of the great difference in our attitude, methods and principles.

Technically, we, like the Russians, understand that cinema must be absolutely independent of the stage; while European films to this day still are influenced by the stage. The famous actors and directors of the European theatre are also creators of films. They seem to think that cinema must borrow from the stage its basic principle of acting. Here, we know from experience that sometimes the best stage actors are helpless before the camera, and most successful playwrights are of no use in writing a film story. We make so many pictures that in search for a new film theme, we do take popular plays and novels but we take their theme and melt and mould it into the plot of a screenplay.

It is generally a mistake to compare theatre with film or to try to expose them as rivals. The evidence that the theatre received a mortal blow with the maturing of the cinema, is not a sufficient reason for the stage to die. These two arts are of a divergent nature; cinema as a collective art includes the actor but gives him a new form, a new meaning of expression. Both arts have their right of existence without rivalry. The film actor must be truthful, and natural before the lens of the camera, whose angles, distance, are steps for gradual building up of a situation. For the actor of the theatre the different angles of the camera are only technical moments.



The sudden revolution of sound film production, its amazing effect upon millions of movie-goers, manifested itself in a way definitely advantageous to cinema art. Theatre again tried to influence the screen. The first prevailing opinion was that after the birth of film sound the stage would encroach upon movie art like a polyp and throttle its right of self-existence. But in Hollywood, sound film proved to be a phoenix in art. It demanded new creators, and—most astounding—it created them by itself. American movie production entered a very definite independent artistic road.

European pictures that are made on a high artistic standard, even too much so, often bring naked realism to the screen; sexual feelings are demonstrated to the extreme. In their mysteries and dramas, evil wins without being punished. These things are strange to us. Though we have no specific rules about how much we can or cannot show or express, there exists an unspoken understanding between our cinema industry and our audience. We also have an ideological difference in our conception of themes for the screen. Our philosophy is to destroy evil, and see good triumph.

The most outstanding, strikingly evident difference between European and American cinema art is the way the screen actor manifests his performance. In Europe he plays his roles with all

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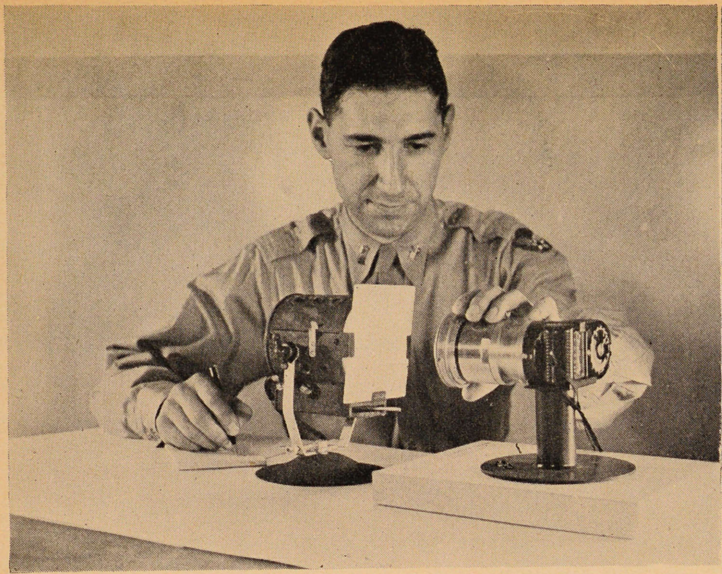

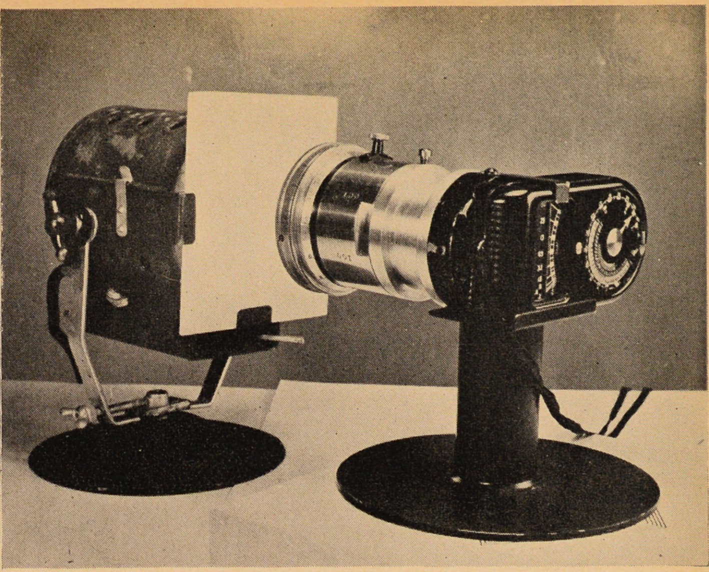

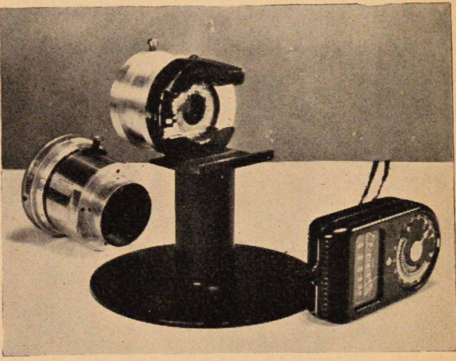

Upper left, the author using tester. Top right, the tester in operation. Above, the lens, tester and meter.

MATCHING LENS DIAPHRAGM SETTINGS

By CHARLES H. COLES, 2nd Lieut., A. C.

EXPOSURE is defined as the product of the intensity and time that light operates upon a sensitive surface. The intensity of light that strikes a film is affected strongly by the lens through which all of it must pass. The combination of the diaphragm, focal length, and transparency of the lens controls the total amount of light that strikes the film.

The diaphragm is usually quite accurately set at the factory; so, too, is the focal length which is built into the lens during manufacture.

The only remaining unknown is the transparency, or, as it is more accurately known, the transmission of the lens. This transmission is dependent upon the number of lens elements contained in an objective and the degree of discoloration of the cement and lens surfaces. This discoloration may increase with age, so it is a factor that varies gradually with time. A lens that has its elements treated with the anti-reflection coating may have a lens transmission as high as 95%. An untreated lens may drop as low as 35% for an old, multi-element, discolored objective. This represents a range of over one whole stop in the diaphragm setting.

Errors in marking diaphragm indexes are very infrequent but another possible source of trouble. All in all, a method of testing the lens transmissions is a valuable one, particularly where many lenses are being used in one organization and the results must be uniform.

Theory

If a lens is directed at a uniformly illuminated screen whose area is greater than the angular field covered by the objective, the light will be fairly evenly distributed over the film aperture. The intensity of this light at the film plane will be controlled by the intensity of the source, the diaphragm, and the lens transmission. The light source, once a convenient one is selected, can be kept sufficiently constant for our purposes. The lens transmission remains constant over a considerable period of time, leaving the diaphragm as the only variable factor.

Measuring Apparatus

To aid in standardizing the diaphragm markings of a group of lenses, a lens transmission measuring device was constructed as shown in the photographs. It consists of a tube mounted on a pedestal. Into this tube, standard Mitchell lenses fit snugly, held in place with a set screw. At the focal distance behind the lens, an aperture is placed to restrict the field of the lens to a given solid angle.

In the first model of this device, the aperture was rectangular, the size of a motion picture frame. This shape proved impractical because of the falling off of light near the edges of the picture by the vignetting action of the lens under test. A circular aperture ¾ inch in diameter was substituted for the rectangular opening to produce a more uniform response.

For use with wide-angle lenses where the falling off of light at the edges is more severe, a smaller diaphragm, ⅜ inch diameter, was made. Being one-half the diameter of the other aperture, it is one-quarter of the area. Readings made with this diaphragm in place must be multiplied by 4 to make them comparable with observations made with the ¾ inch diaphragm.

The other end of the horizontal tube has a clip to hold a Weston Master Exposure Meter with the low reading door open. Any exposure meter may be used with equally effective results. The only reason for using the Weston was that it was on hand at the time of design.

The light source is a Dinky Inky equipped with a piece of flashed opal glass over the front of the light. The opal glass should be placed fairly close to the front of the lens under test—about two or three inches away.

Balancing Lenses

The first requirement of any measuring system is a standard to which unknown units may be compared. In the case of lenses, a relatively new 2 inch objective should be selected that hasn't had a chance to change with age as yet.

The lens is placed in the tube, and the aperture set to the *next* to the largest diameter, say *f*/2.8. Make this the standard aperture. Now adjust the Dinky Inky focusing lever until the Weston Meter reads 25. Now set the diaphragm of the lens to its lowest figure and read the meter. The readings will be directly proportional to the light passing through the lens. Each diaphragm stop down

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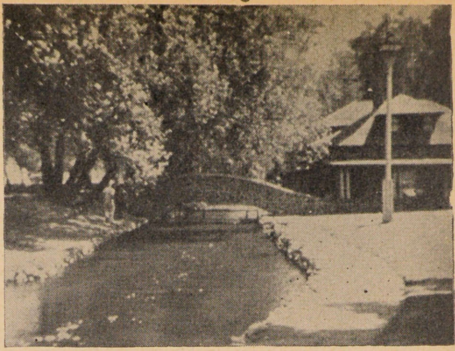


The series of illustrations on this and opposite page are taken from film shot by the author starting in 1933 and up to now. Above is from a 1942 film. Left is from one of his films of this year.

DIARY OF A 10-YEAR MOVIE MAKER

By JAMES R. OSWOLD

DEAR DIARY: This is my tenth anniversary . . . tenth anniversary as a movie maker, I mean. Many things, both encouraging and discouraging, have happened during all this time, but I still keep grinding away. What on earth ever possessed me to take up movie making in the first place . . . what's there about this business that continually holds my attention? Let's turn back the pages of time and SEE what it's all about . . . shall we?

1933

I can't resist any longer! That movie camera advertised in the newspaper is SUCH a bargain, even if it isn't a very elaborate outfit. Besides, I've always dreamed of taking my own movies and now is my chance. I'll try my luck!

Anxious to see just what this camera will do, so my first film will be sort of a test reel to acquaint myself with its operation. (Lucky thing the Century of Progress Exposition is going on here in Chicago . . . will give me a wonderful opportunity to take some historic souvenir shots later on.) Can't wait to see that first reel now, though.

What's this? Back from the processing laboratory already? Think I'll take a peek at those opening scenes before I set up the projector . . . the suspense is terrible. Hmmm, not bad; not bad at all, for a beginner! Better SHOW the film now before the reel is all unwound.

Exposures about 75 per cent perfect, thanks to careful following of the guide in my manual. Must remember, though, to use a tripod for ALL scenes and to avoid panning. Think I'm going to like this game!

1934

The exposure problem is pretty well licked now, and the pictures are rock-steady on the screen. Any motion is furnished by the "actors" and not by the camera. I must try, however, to build up some kind of a story telling sequence in the future . . . the pictures are MUCH more enjoyable that way. More frequent use of closeups is advisable too, because everyone likes to see things at close range.

My 400-foot vacation film is one of the most painstaking things I've yet attempted. The importance of changing camera angles often is brought out here. All in all, it's a good reel. With a little editing here and there and perhaps a title or two, it can be made into a really nice movie. At any rate I'm steadily improving. It takes a little experience to learn just how long each scene should appear on the screen, though. Filters certainly would have helped those scenes with the blank sky!

1935

The Eastman Kodak Company has just introduced a new color film to the 16mm. field which they call Kodachrome. It's supposed to be really sensational . . . no special filters or other attachments are required for either the camera or projector. I want to be among the first to try a roll, but it sure will put an awful hole in the pocketbook . . . costs twice as much as the black and white film I'm accustomed to using!

It seems there's a new lighting and exposure problem encountered here. Only flat lighting with the sun directly behind the camera is recommended because, unlike with black and white film, contrast is furnished by COLOR rather than by lights and shadows. A somewhat larger lens stop is necessary, too.

I guess I under-exposed a good part of this reel. But the naturalness of the colors . . . it's remarkable! A black and white film looks sick by comparison, so without a doubt there's a whole new broad horizon beginning to open up for the movie maker, with possibilities unlimited and realness undreamed of.

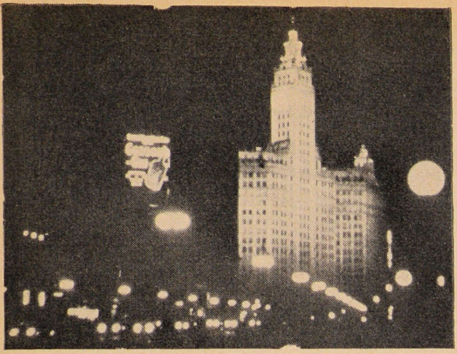
1936

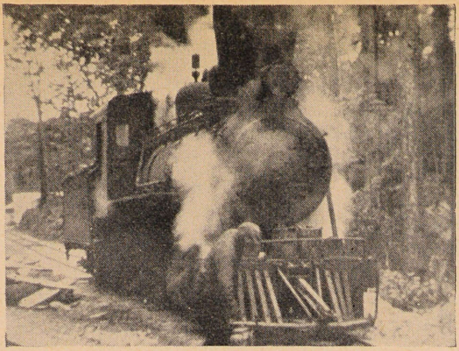
By this time my friends and relatives are commencing to take an interest in my movies. They see something rather fascinating about this hobby of mine, especially now that I've included them in some of my scenes. They look forward to the return of the films from the processing station, almost as eagerly as I do.

Filming is going on as usual, the movie camera always being an essential part of my vacation luggage, of course. Both the camera and myself get our biggest work-out on our trip to the North Woods.

Projection, too, is becoming quite an art with me. I've learned the importance of smooth flowing presentation, especially when guests are invited . . . my films are always rewound, ready to go . . . the best reels are saved, 'till the last . . . and threading is done quickly and accurately.

Older reels are more valuable than ever, since most scenes cannot be duplicated at any cost. It certainly is great to be able to bring back those fond memories.


1941


1940

1939

1937

My latest Kodachrome film is surely an improvement over my first attempt at color photography. That's because I've adhered more closely to the proper lighting technique and learned the fallacy of side lighting. Then, too, the exposure angle has been fairly well mastered now that I have become more accustomed to the latitude of the film. There's really no trick at all to this work, if only good judgment is exercised before shooting . . . if only it is remembered that COLOR is making the picture and NOT shadows. Of course this doesn't mean either that every conceivable color, no matter how gaudy, should be crammed into the scene just to take advantage of the fact that it IS color film . . . that's defeating the whole purpose of the thing. True, that Kodachrome is capable of recording all those colors in the most lifelike manner imaginable, but certainly good, harmonious blending of the hues should be maintained.

So much for my accomplishments with this increasingly more popular color film. The day will soon come when Kodachrome will out-sell black and white, and why not?

1938

A documentary record of a trip to Canada is the high-light of this year's cinematographic endeavors. This film, in the form of a travelogue, offers diversion since the territory covered is all new and unfamiliar to me. For that reason, in a movie of this sort, there cannot be much advance planning, because of the impossibility of knowing ahead of time just what conditions will be encountered. All shooting is rather on the spur-of-the-moment and the most has to be made of situations as they arise.

One thing is always advisable, however, on a journey of this kind. A few intermittent road scenes and other interesting side glances taken en route are wonderful for bridging the gap between towns and main points of interest visited. It is preferable in such shots to include views of the car driving through the camera field in order to furnish a little action to the scene, as well as to add a personal touch by making future audiences imagine they are also making the trip.

Incidentally, pictures of road signs showing route numbers and approaching town limits afford a very excellent, clever method of titling on location.

1939

Nothing very out of the ordinary happening in the way of movie making this year . . . just routine filming. I did start, though, what is to be a portion of a 400-foot Kodachrome "epic" depicting the elegance of nature's handiwork throughout the four seasons. Naturally, this will take at least a full year to complete . . . probably longer if any retakes are necessary. Don't know if it will ever get finished but it's a good idea, and in any event each portion is complete in itself.

A new projector has been added to my paraphernalia which cut a deep hole in my budget. There won't be many new "productions" under way for a while, I'm afraid, for obvious reasons.

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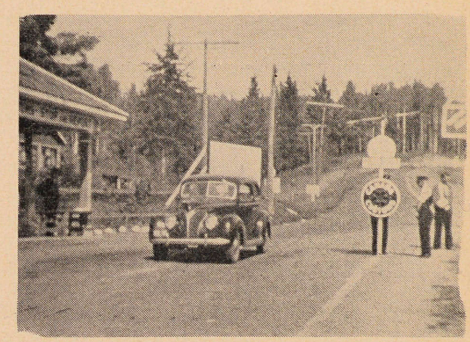
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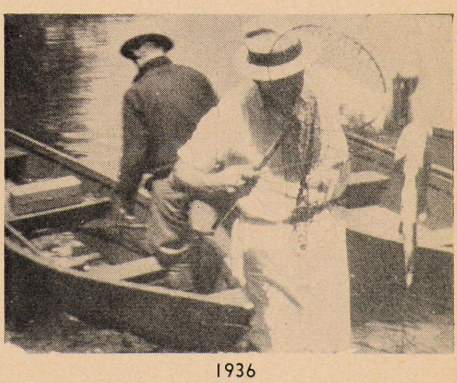
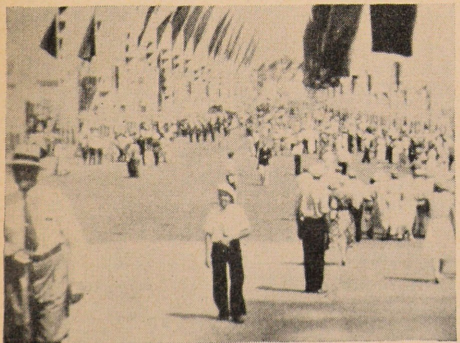

1936


1933

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1935

Electronics in Photometry

By G. B. HARRISON, Ph. D., F.R.P.S.

THE subject I have been asked to deal with may be described as the impact of electronics in photometry. It is inevitable, therefore, that most if not all the applications involve a photo-cell of one kind or another and any attendant electronic devices that are necessary.

The human eye is a very remarkable instrument, but it was not developed for making photometric measurements and it is not, therefore, surprising that in certain respects the photo-cell has advantages. Most of its advantages are, however, of convenience only and its only real property which makes it capable of performing operations of which the human eye is quite incapable is that its sensitivity may extend into regions in which the eye is totally insensitive, e.g., infra-red and ultra violet. Most photometric measurements are made by comparing brightness, and the photo-cell in certain circumstances has an apparent advantage in that it is capable of making absolute measurements in the absence of a direct comparison.

In dealing with this subject in such a short time, it is quite impossible to cover the whole field as I have had to be content with a few selected applications which seemed to me to be of most interest.

Densitometry

One of the earliest applications of electronics, apart from sound, was the use of the photo-sensitive element for measuring density. The early visual instruments were tedious and slow in use and it was natural that a more objective method should be sought. The first photo-sensitive element to be used was the selenium cell which changed its resistance on illumination, but these were very soon replaced by the photo-emissive cell. The photo-emissive cell had many advantages in spite of its requiring a vacuum tube D.C. amplifier, and many densitometers differing mainly in detail have been constructed, some of which have been made available commercially. The appearance of the barrier-layer type of photo-cell has created a flood of new densitometers employing this new sensitive element which has both advantages and disadvantages over the photo-emissive cell. I do not believe, however, that the barrier-layer cell will entirely replace the photo-emissive type; its main advantages lie in simplicity and low cost.

Nearly all densitometers have been made to operate by a null method, the density to be read being compared with a known density, the cell being used to detect equality. It follows that the operator besides inserting the density has to perform the operation of adjusting the comparison density until the same value is inserted in its light beam. This takes time and to a smaller extent skill.

One of the reasons for this method of working is that density is a logarithmic function of the fraction of the incident light transmitted and before a uniform direct reading density scale can be obtained it is necessary to introduce a logarithmic relation. This has been done in a variety of ways none of which has been entirely satisfactory until recently. One of the most important developments in this field is the means of producing logarithmic amplifiers giving a straight line relationship between log. input and output over a considerable range.

At the same time means are available today of producing main operated D.C. amplifiers of much greater stability than was possible some years ago. Several densitometers employing this principle have been described in the literature, their principal feature being that they are direct reading. This principle considerably simplifies recording densitometers and I see in the near future small, compact instruments into which you feed a sensitometric strip, exposed to a continuously varying exposure instead of a stepped exposure, and accept a characteristic curve in a few seconds, not only plotted, but completely drawn in ink on printed graph paper.

Screen Brightness

More attention is being paid today to screen brightness, no doubt due to the incidence of the colour film. Instruments for measuring screen brightness are usually based on the barrier-layer photo-cell. Other types of photo-cell are primarily suitable for matching and their use would require the inclusion of a standard comparison source in the equipment.

The accuracy required in screen brightness measurement is not high, and whilst average brightness only is required the present systems are adequate. If brightness readings are required in different regions of the screen, difficulties of sensitivity appear if a robust measuring instrument is to be used. This difficulty may resolve itself in the future by an increase in cell sensitivity and perhaps an improvement in screen brightness, thus raising the limiting brightness it is required to measure.

Measurement of the screen illumination is, of course, easier but to obtain the brightness the reflection factor must also be determined and this presents difficulties of its own.

Exposure Meters

The problem of estimating the camera exposure and of estimating the printing exposure required for a given negative are very similar. This is only to be expected because the negative is a record of the subject with tones reversed. The use of the barrier-layer cell for camera exposures is well known and any defect in the results is due to failure of the method of use rather than the instrument.

To estimate exposures accurately it is necessary to know the maximum and minimum brightness in the subject so that the brightness range can be located as desired in the negative characteristic. Exposure meters which integrate the light reflected from the subject or transmitted by the negative, or give the value of the light flux falling on the subject give readings which are proportional neither to the maximum nor minimum brightness. The fact that the readings are of any use at all is due to the relatively small difference in subjects and the latitude in exposure of the modern emulsion. If anyone should think it worth while, an exposure meter could be made which scans the scene and gives an indication of the maximum and minimum brightness values.

The direct control of aperture by photo-electric means has been successfully achieved, but all systems use the integration method. This is inevitable in a simple instrument and the same remarks apply as are made on the exposure meter. The difference between the meter to be read and the direct meter is one of mechanics only.

Film Examination

With the introduction of panchromatic film and its rapid increase in speed the problem of handling the film in the dark room became more difficult. It was no longer possible to use a safelight of such a colour that its light affected the eye but did not affect the film even with prolonged exposure. It was necessary to use a small amount of light of the colour to which the eye is most sensitive, i.e., green, but panchromatic films today becomes so fast that the amount of light that can be used with safety is so small that it is barely enough to see by. In ordinary handling of such film it is quite practicable to operate in total darkness, but there is one process in the manufacture of film that cannot be so easily accomplished. This operation is the examination of the film for faults.

It is obvious from the enormous footage of film used and the comparatively rare appearance of a fault that faults are not frequent, but faults are costly and it is important that they should be "examined out." The speed of the fastest panchromatic film today is such that visual examination under conditions of illumination that just do not produce perceptible fog, a fault has to be approximately equivalent to a black circle several mms. in diameter before it can be detected with certainty. The situation is of course likely to get worse rather than better, but the difficulty has been solved by the use of electronics.

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A.S.C. on Parade

As this issue of the Cinematographer goes to press, ASC members are photographing the following pictures:

Columbia Studios

"None Shall Escape," Lee Garmes.

"Curly," Franz Planer.

"Ten Per Cent Woman," Joseph Walker.

"Swing Out the Blues," Arthur Martinelli.

MGM Studios

"The Canterville Ghost," Robert Planck.

"Gaslight," Joe Ruttenburg.

"Mr. Co-Ed," Harry Stradling.

"Kismet," Charles Rosher.

"Two Sisters and a Sailor," Robert Surtees.

"Dragon Seed," Sidney Wagner.

Paramount Studios

"Frenchmans' Creek," Charles Lang.

"Going My Way," Lionel Lindon.

"Our Hearts Were Young and Gay," Theodor Sparkuhl.

"The Man in Half Moon Street," Henry Sharp.

"Rainbow Island," Karl Struss.

RKO Studios

"Tender Comrade," Russell Metty.

"The Falcon in Texas," Harry Wild.

Republic Studios

"Casanova in Burlesque," Reggie Lanning.

20th Century-Fox Studios

"Home in Indiana," Edward Cronjager.

"The Sullivans," Lucien Andriot.

"The Eve of St. Mark," Joseph La Shelle.

"Four Jills in a Jeep," Peverell Marley.

"The Purple Heart," Arthur Miller.

United Artists

"Since You Went Away," George Barnes.

"Knickerbocker Holiday," Phil Tannura.

"Bridge of San Luis Rey," John W. Boyle.

"Timber," Russell Harlan.

"It Happened Tomorrow," Archie Stout.

Universal Studios

"Gung Ho!" Milton Krasner.

"When Ladies Fly," Hal Mohr.

"The Imposter," Paul Ivano.

"Three Cheers for the Boys," David Abel.

"Phantom Lady," Elwood Brendell.

"Gypsy Wildcat," George Robinson.

"Her Primitive Man," Charles Van Enger.

"Patrick the Great," Frank Redman.

Warner Bros. Studios

"Passage to Marseille," James Wong Howe.

"Uncertain Glory," Sid Hickox.

"Outward Bound," Carl Guthrie.

"Mr. Skeffington," Ernest Miller.

"Animal Kingdom," Bert Glennon.

Films Soldiers Want

(Continued from Page 395)

Knowing the average Hollywood product and what results Hollywood, with all its technical skill and knowledge, could so easily achieve with a little bit of serious thinking. I do not believe that these mistakes are unavoidable. Even a green rookie, who has been in the army less than a month, could pick out a dozen obvious deletions, mistakes or faults in practically every Hollywood portrayal of army life.

Those soldiers who have read "See Here, Private Hargrove," that excellent and amusing piece of G.I. prose about the experiences of one of us, are looking forward with a great deal of anticipation to MGM's film of Hargrove's book. They are hoping that for once they can look at the screen and see a G.I. haircut where there should be one, and army life, in general, treated as they are expected to treat it—with a sense of humor, yes, but with a great deal of attention and discipline. What is more, they do not want army life portrayed correctly for themselves alone. They want their home folks to be able to recognize them in these pictures, and realize how hard a job they have. They do not want their "best girls" to look at an army comedy and then write to their real soldier-sweethearts, "Bill, the army really isn't tough at all—Why, I saw a picture last night and . . ."

Remember RKO's "Private Smith, USA," of the "This Is America," series? Or "Stage Door Canteen." They had what it takes to show the home folks what it's all about.

Of course, there is another kind of army "entertainment." These films, however, are not shown the soldier for relaxation and amusement. They are deadly serious, these pictures, and they serve as part of the soldier's training. These information films are perhaps what some of our senators would label as "propaganda."

"Propaganda they are, yes, but propaganda for that very rare commodity known as truth. They are produced by the war department with the help of such expert Hollywood directors as Lt. Col. Frank Capra and Lt. Col. Anatole Litvak. The "Why We Fight" series of seven information films about our enemy, the first of which was shown in civilian theaters all over the country under the title, "Prelude to War," is a favorite topic of discussion among soldiers who are wide awake to the problems of the international scene. Films such as "The Nazis Strike," and "Divide and Conquer," both of the "Why We Fight" series, are excellent sources of information to the young trainee who is getting ready for the final battle and who wants to know the answers to some questions in his mind regarding the war and its causes. Prof. Max Lerner, in an editorial in the newspaper PM, said recently:

"Our soldiers . . . are moved by two primary drives. One is not to let down the folks at home, to do them proud. The second is their instinct of workmanship. They have a job to get over with, and they want to do it quickly and well.

"But they will need more before they are wholly through, these youngsters. The soldiers in a great army must have a belief in themselves and their world. They need a knowledge of what enemies threaten their world, and above all, they must understand what the enemy principle is. They need a belief in the superiority of their world to others, a confidence about its chances for growth and about their own opportunities in it."

The army today realizes fully that an informed soldier—a man who knows how to use the weapons issued to him, as well as why they were issued to him—fights better than a soldier who simply goes into battle because someone ordered him to go.

The army of today, the modern, well-disciplined, enlightened army of the United States, is getting all the benefits of Hollywood's great experience in the making of motion pictures in the war department's training films. The soldiers can well do without cheap little comedies about Hitler, Hirohito and Mussolini being captured in a mystical land by shipwrecked American sailors with the help of native magicians. The war is much too serious, much too deadly, for these things, and the men who are directing the armies that are firing the bullets and grenades at our comrades at the front are too vicious and brutal to be used as leading characters in low-budget comedies. Their antics may have once looked funny to us when we saw them speak in the newsreels, but we've grown up since then.

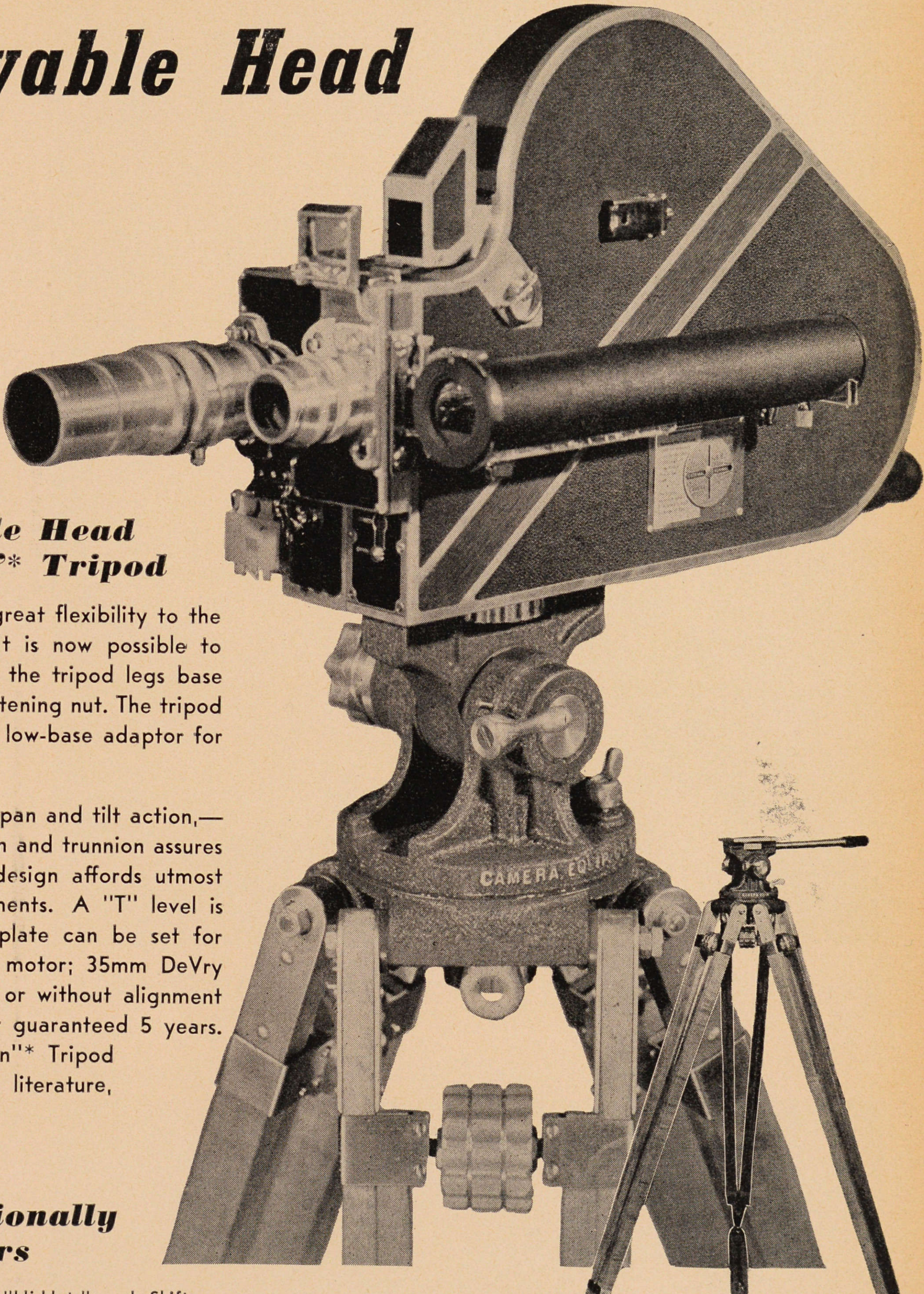
Why not take a tip from the army's training films? The enemy who is killing our men at the front and the soldiers of our Allies isn't a comical figure any more. He is cunning, and brutal, and clever. His Lives and Loves are not important. It is the Lives and Loves of the men he kills that counts.

Series Pix Continue

AMERICA'S 22 months of war have changed Hollywood in all but one respect: series pictures. Unchanged in number and content, the group films continue to be made, and basically don't flag in appeal. Here and there a few of the interlockers have fallen by the wayside, after passing their peak. But others have taken their place as studios find characters with a fresh pull.

"PROFESSIONAL JUNIOR"* TRIPOD

With Removable Head



The New Removable Head "Professional Junior"* Tripod

★ The new removable head feature adds great flexibility to the versatile "Professional Junior"* Tripod. It is now possible to easily remove the friction type head from the tripod legs base by simply unscrewing a finger-grip head fastening nut. The tripod head can then be mounted on a "Hi-Hat" low-base adaptor for low setups.

The friction type head gives super-smooth pan and tilt action,—360° pan and 80° tilt. A generous sized pin and trunnion assures long, dependable service. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. A "T" level is built into this superfine tripod. The top-plate can be set for 16mm E.K. Cine Special, with or without motor; 35mm DeVry and B & H Eyemo (with motor), and with or without alignment gauge. The tripod head is unconditionally guaranteed 5 years. More data about the "Professional Junion"* Tripod With Re-movable Head is contained in literature, sent upon request.

Tripod Head Unconditionally Guaranteed 5 Years

"Professional Junior"* Tripods, Developing Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and other Government Agencies—also by many leading Newsreel companies and 16 mm and 33 mm motion picture producers.

* Patent No. 2318910

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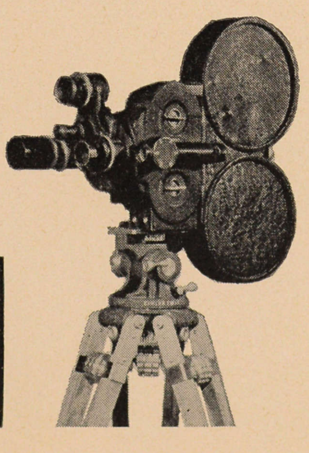
CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY



Above—Collapsible and adjustable telescoping metal triangle. Extends from 16½" to 26½". Has wing locking nuts for adjusting leg spread and stud holes for inserting points of tripod feet. Triangles prevent damage, insure cameramen that their equipment remains in correct position and will not slip on or mar any type of surface. Further particulars on request.

Left—B. & H. Eyemo mounted upon the "Professional Junior"* Tripod.

Here We Go!

New Television Patents May Broaden Screen

PERFECTION of new television projection apparatus which will make large screen television for motion picture theatres, homes and churches, both in black and white and natural color, available commercially soon after hostilities cease, was announced yesterday by Arthur Levy, president of Scophony Corporation of America. Latest television developments are incorporated in two U. S. patents, issued in Washington, covering the Skiatron system, an expansion of Scophony's basic methods. Scophony is associated with Television Productions, Inc., a subsidiary of Paramount Pictures, and General Precision Equipment Corp., which is associated with Twentieth-Fox and Time magazine.

Levy described the new system as having characteristic features in common with cinematography by which, for the first time, it will be possible to project a large screen television picture up to full-size theatre screen with brilliance equal to motion picture standards. The new inventions, the work of Dr. A. H. Rosenthal, director of research and development, will answer the need for high definition television pictures in any desired size in black and white and color, Levy said. Scophony's basic large screen methods Supersonic and Skiatron, hold vast significance for the motion picture and radio industries and will undoubtedly influence the future of television, he declared. The system is similar to motion picture projection technique and a theatre projectionist can learn to operate the Scophony projector in a few hours. The home set is said to be no more difficult to operate than a radio receiver.

Negro Newsreel Seen By 4,000,000

ESTIMATING a weekly attendance of four millions, E. M. Glucksman, producer of the All-American Newsreel, said yesterday that an OWI survey reveals that 85 percent of the negroes in five large cities get most of their news on negro affairs from the newsreel. Four million weekly attendance, he said, is larger than the combined circulation of the nation's 242 negro newspapers.

The All-American reel, a year old this week, is now seen regularly in 365 of the 451 civilian negro theatres, he said. Many, if not most, of these theatres use one or more of other reels also. The negro reel appears once weekly, and is distributed by AMPS to 70 military camps in this country, some of them with three and four theatres to a camp, and is shown also in Africa. About ten percent of the footage for the first year was directly on military subjects—either actual combat or training—with much of the rest of the footage concerning important home-front topics such as bond sales, collection campaigns and others.

TWO
ALL-TIME HIGHS

WITH millions of feet required by our Armed Forces for training and other military purposes, the total production of Eastman motion picture films has pushed into new high ground. And the all-around quality of this huge output has never been excelled. Eastman Kodak Company, Rochester, N. Y.

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EASTMAN FILMS

Improving Amateur Projection Technique

By F. C. MOULTRIE

WITH wartime restrictions affecting the supply of raw film stock, it may be that many amateurs will feel disposed to seek means of "keeping their hands in" in film activities which do not require the making of new films. One of these activities could consist of more frequent showings of films we have made in times past, and this would seem to be an appropriate occasion to brush up on our projection technique and consider the factors involved, so that when peacetime again brings us an eagerly-awaited abundance of supplies we may have found this "breathing spell" of actual benefit, which will be reflected in our future movies.

It will readily be admitted that the greater percentage of us carry out our film showings in a very haphazard manner, and while we do not possess those conveniences which enable us to duplicate the ideal conditions obtained in a theater, most of us could, nevertheless, far more nearly approach those conditions than we do.

There are three prime considerations. (a) *What* is shown. (b) The *conditions* under which the showing is made. (c) The *manner* in which it is carried out. Of course, the actual preparation of the film itself is of utmost importance and requires volumes all to itself, so that only a word may be said here to remind ourselves that we should not exhibit films to our friends till they have been carefully edited, cut, titled, etc., all splices carefully made, damaged portions removed, brittleness and shrinkage guarded against by suitable humidification and opaque or "end" trailers placed at the finishing ends. Lastly, films must be kept clean.

Perhaps a good way in which to approach the matter and endeavor to effect improvements would be to ask ourselves, "What have I usually experienced from *other* movie makers, and what have I usually offered to my friends in the shape of movie showings that I would consider much in need of improvement?"

Excluding the fortunate minority who possess properly fitted out recreation room theaters, most of us have given a show somewhat along the following lines. We have trotted out our projection apparatus among a group of friends variously "draped" about a room which has grown stuffy with cigarette smoke, etc. We plant our screen at one end and mount our projector at the other—very likely upon a none-too-secure foundation, which permits the machine to sway or vibrate. The enlarged frame on the screen will suffer magnification of these motions and add to our guests' discomfort. Having mounted the projector in this fashion, we begin experimenting while our guests are present in the room. When we announce that all is ready, they group around on anything they can find, in none-too-comfortable positions, in which, perhaps, neither they nor you have given any thought to "head room." Then we call for "lights out"—since we have not provided a ready means of snapping lights off and on from our vantage point at the projector. Thereupon someone rises, snaps off the room lights, then, with our film already started, gropes his way back to his seat, stumbling over legs and feet and getting into the projection beam en route.

He is "on the beam" all right—but the wrong beam! Of course, we have also neglected to first prepare our film, or the projector, or to focus on to the screen ahead of time, so that adjustments of focus, framing, etc., are finally made only after the main title has gone on its way to oblivion. The series of stoppages occasioned by lost loops, breaks, and so forth, which have sadly come to be an expected feature of many amateur shows, then follows. Frame lines keep appearing at top or bottom edges of the picture. This may be caused by film shrinkage—in which case the fault may be our own—unless different makes of film have been spliced together. Also, film taken in different makes or models of cameras and spliced together will often show similar characteristics in respect to frame line troubles and this is another factor for which we can assume no responsibility. But it is attribuatable to us if we are not "on our toes" to adjust the framer of the projector immediately such frame lines appear.

Another very prevalent fault of our shows may be that of nearly blinding our guests at the end of each reel by running right through on to a glaring blank screen. Now the avoidance of the foregoing and a great many other annoyances can easily be assured by a little forethought and preparation, requiring no expensive equipment. We mentioned earlier in this article THREE prime factors, the first of which was concerned with the film itself. Do not let us any more invite our friends to see our films unless we have first prepared them as already suggested.

Our next prime consideration was the matter of CONDITIONS under which we display our films. Let us make our audience as *comfortable* as possible. Use only a beaded or aluminum surface screen, and place it so that the lower portion of the picture will be above their heads when they are seated. Try and arrange all this as well as the seating, the focus of the picture, etc., beforehand, as well as means of ventilation of the room and adequate *darkening* of the same.

There is a simple piece of apparatus we should resolve to equip ourselves with, and that is a SOUND and LIGHT-proofing BLIMP. Have we ever stopped to consider how disconcerting it would be to witness a regular theater movie if the projection machines were parked out amongst the audience, in the open? Enjoyment of the film, I think most will agree, would be practically reduced to nil. Yet, in the case of substandard movies, this is invariably done.

To say nothing of the noise from even the quietest of machines, they universally leak streaks of light which play on walls and ceiling and are reflected on to the screen. Hence our sound and light-proof BLIMP. We will build it of wood, and line it with the best sound-insulation material we can currently secure. Suitable light-trapped vents will be provided—a large one at the top rear for the exit of the heated air flow from the lamp house and a row of intake vents around the base. In front there will be a good piece of plate glass, as a window through which to project the picture. This window will be covered with a hinged flap.

Perhaps we may, if ambitious, include a holder for color filters with which to provide special effects, such a blue for night scenes, etc.; red for fires or explosions; green for deep pastoral or river scenes, and so on. If we are mechanically inclined, we can fit extensions to the projector controls, which may be carried to the exterior of the "BLIMP." If we cannot do this, a quickly removable panel must be cut, which will enable *immediate* access to the controls and which can be instantly replaced the moment adjustments have been made.

Mount the projector inside the blimp on sound-proof material which, if it is of non-rigid nature, like rubber, felt, etc., must be so arranged or supported as not to permit the projector to sway or vibrate excessively. Then be sure to pick out a table or stand which is rigid and secure, on which to mount the "ensemble." If the little woman objects to our using her best polished-topped end table, even though it is a nice, solid one, we had better save up our pennies and purchase something of our very own. Here again, if we are handy, we can construct something to our own design. There is room for quite a degree of ingenuity to be displayed in this. For example, the "blimp" and stand could be all built as one integral unit. One other item we must prepare. If we cannot reach existing stand, table or room light switches from our projection vantage point, let us provide ourselves with an extension line and switch of some kind.

Since our "blimp" is for the purpose of both sound AND light suppression, our aim will be largely defeated if fog marks and shadows from stray light from other sources than the projector are reaching the screen. It would be advantageous to set up our screen at some convenient time and carry out a test to discover if any such stray light crosses it. From street lights, perhaps, or from passing vehicles, or there may even be light passing through cracks around doors from other lights in the house. Such stray light may not reach the screen direct, but may be reflected from walls, ceiling, mirrors, or other shiny surfaces. Cheap "needle" paper (obtainable from Kodaks) or other opaque material, fitted with sticky tape, may be used to cover windows or shield the screen from points whence such stray light is being transmitted. These precautions will reward us many times over in securing unbelievably improved results. If we use an amplifier to provide musical and/or spoken accompaniment in the presentation of our films, the use of a "blimp" will be doubly appreciated, for the clatter of an "open" projector is bad enough as a solo. The addition of music—otherwise emphatically desirable—only seems to add to the confusion when the projector noise is intermingled with it.

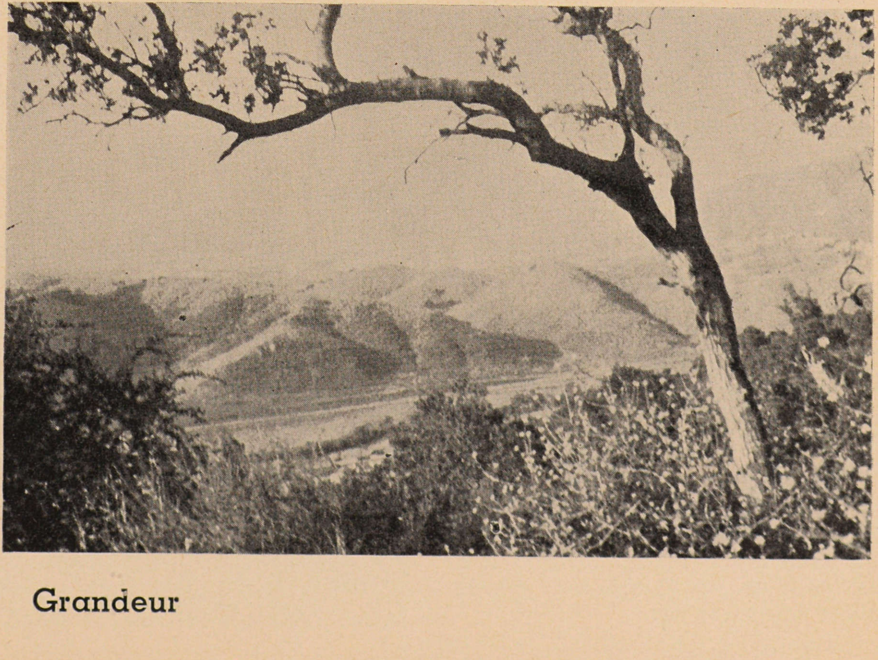
While we are on the subject of sound, we may as well remind ourselves that the same remarks apply here regarding pre-care to have everything in order and all experimentation carried out in advance. Also let us arrange our selection of recordings in their correct sequence and have our script, if any, covered with a hooded light. One man I know has his script typed and arranged on a continuous roll (adding machine refills) which he winds off from a full to an empty roller by means of a hand control knob, as he reads. The script has the "cues" for music, etc., tune-ins, fades, and so on, noted in the margin at the appropriate point. Such a script can be covered by the very smallest of miniature lights. The entire arrangement is excellent. This man presents his films so well and with such meticulous care that he is in demand everywhere. Needless to say, he exhibits the same care throughout—in his choice of subject material, his treatment, planning, editing, cutting and titling. He is a credit to all amateurs. Yet, when analyzed, his work is only the application of common sense and employs that which everybody knows or should know if they take an interest in their hobby.

The cleaning and oiling of the projection machine, of course, takes its place with the other pre-show preparations. Particular attention should be given to the cleaning of the gate apertures, to free them from unsightly accumulations of dust and fluff, which will be much magnified when projected on to the screen. To prevent recurrence of this during projection, only films which have been periodically cleaned should be projected. (There are numerous cleaning pads and preparations on the market.)

And now we come to the last of our "prime consideration"—the manner in which the film is shown. We have already dealt with much of the material affecting this and there is no need again to review what we have said about being "on our toes" to immediately correct misalignments of frame lines, focus, control of room lights and smoothness of presentation of music and speech accompaniment (if any). One thing of great importance, however, may be said in connection with avoidance of "running off" the end of a film on to a blank screen.

It will be recalled that we included, in the recommendations concerning preparation of the film itself, the advice to attach opaque or "end" trailers to the ends of all films. This is for the purpose of giving time to lower the flap over the "blimp" window before the film runs out. A far smoother way to finish, however, is by a kind of fade-out, accomplished by lowering the window flap at a medium rate of speed, just as the "action" part of the film is drawing to a close. One or two frames near the end of the film are pierced with a few pin pricks or minute punch holes. Knowing they are somewhere near the finish of

(Continued on Page 415)



Grandeur

AMONG THE MOVIE CLUBS

Metropolitan Club

FOUR films were shown at the October meeting of the Metropolitan Motion Picture Club, held at the Victoria Hotel, New York City. They were "Gaspe Peninsula," by J. O. Van Tassell; "The South Wind Whispers," also by Van Tassell; "White Tail Trails," by Joe Harley, and "Broomstick Gymnasium." Arthur Gale wrote the scenario for the gymnasium picture. Leo Heffernan photographed it, and George Ward handled the commentary.

New members joining the club were Thelma Hensiek, Ann R. Ahern, Grace Bolman, Otto Heinemann, Ann Holzapfel, Evelyn Lawrence and Wilbur Krimpen.

Philadelphia Cinema Club

THE showing of the film, "Filters and Their Use," completed the Harmon Foundation series, at the October meeting of the Philadelphia Cinema Club. An enlightening talk on this subject was given by H. E. Moore, adding emphasis by means of illustrations on a blackboard.

A new principle in third dimensional movies was demonstrated by its inventor, E. H. Bickley. He displayed the instrument called a swing mount and projected a film showing the results. The club also saw a travelogue on South America by Walt Disney.

Saint Louis Club

THREE films highlighted the October meeting of the Amateur Motion Picture Club of St. Louis. They were "Yes Sir, That's My Baby," by Lon Wadman; "Florida In 1941," by Joe Epstein, and "The St. Louis Zoo," taken at the Annual Picnic. Helpful to many members was a demonstration of various types of film splicers and splicing methods.

San Francisco Cinema Club

HIGHLIGHTING the October meeting of the Cinema Club of San Francisco was the screening by A. O. Olson of one of his motion pictures with sound via "magnetized wire." It was a forty-minute Kodachrome film "Come to the Fair."

K. A. Meserole showed an 800-foot black and white travel film titled "Travelogue of the Philippines," which he filmed ten years ago.

Minneapolis Cine Club

THE monthly meeting of the Minneapolis Cine Club was held at the Covered Wagon on Tuesday, October 19th. Featuring the program was a Honeymoon film made by the Club President, Len Martin, while on his honeymoon.

New members just announced are Lawrence T. Anderson, Warren H. Reynolds, George H. Meyers, C. J. Elison, Allan H. Pahr and Dr. W. E. Proffitt.

Utah Cine Arts Club

FOUR films featured the October meeting of the Utah Cine Arts Club, held at the Art Center on October 20th. They were "Vacation Time," by W. L. F. Samuelson; "Dinner Party," by Mrs. Frank Thomson; "Rodeo Thrills," by Jack Andrews; and "Royal Visit," by T. J. Courtney, a record of the British King and Queen's visit to Canada in 1939.

Washington Society

WARING DOANE, Hollywood film producer, spoke before the Washington Society of Amateur Cinematographers at its recent meeting, giving them the outline of the many details that go into making a professional picture. Following Mr. Doane's talk, William Kneppel screened his "Yellowstone Symphony" in Kodachrome.

Long Beach Cinema Club

TWO meetings were held in October by the Long Beach Cinema Club, October 6th and 20th. At the first meeting Carl Weldin showed 400 feet of 16mm. Kodachrome showing Easter Sunrise Services and other miscellaneous scenes. Dr. and Mrs. McCoy showed a Kodachrome picture of Old Mexico and another on Sequoia National Park.

Tri-City Cinema Club

A WALT DISNEY film, "South of the Border," featured the October meeting of the Tri-City Cinema Club. Tom Severs, of Moline Ill., showed an 8mm. film "National Championship Hillclimb" which was extremely interesting. Ray Schmidt, of Davenport, Iowa, screened 200 feet of unedited film, asking for suggestions from the members as to editing.

Syracuse Movie Makers

THE Syracuse Movie Makers held two meetings in October. A Boy Scout film featured the meeting on October 5th. The meeting on October 19th was turned into an evening of pro and con discussions of titles, using positive and the reversal method.

Club members have started a series of home study meetings, with the home study group meeting the fourth Tuesday of each month.

Matching Lens Diaphram Setting

(Continued from Page 401)

should cut the reading in two. If it does not, the stops are not accurate. Turn the diaphragm ring until the meter does read half as much as for the last diaphragm stop. The reading on the ring will now be exactly one stop from the previous setting.

To check the transmission of one lens against another, set the standard lens to one stop below maximum aperture and observe the reading on the meter. Now change to the unknown lens and rotate the diaphragm until the meter returns to the same reading as before. This will indicate the same amount of light passing through the lens and hence the position of the diaphragm will correspond to the setting of the standard lens. If the transmission of the lens is identical to the standard, the diaphragm should read the same as the standard lens. Any variation will show up instantly.

In large studios, a standard lens aperture is usually used in connection with a standard key light level. With the same film used in all the cameras, a constant exposure is assured provided the lenses are all matched for transmission. The lens transmission tester is invaluable for cases such as these.

Friedman Joins Agfa

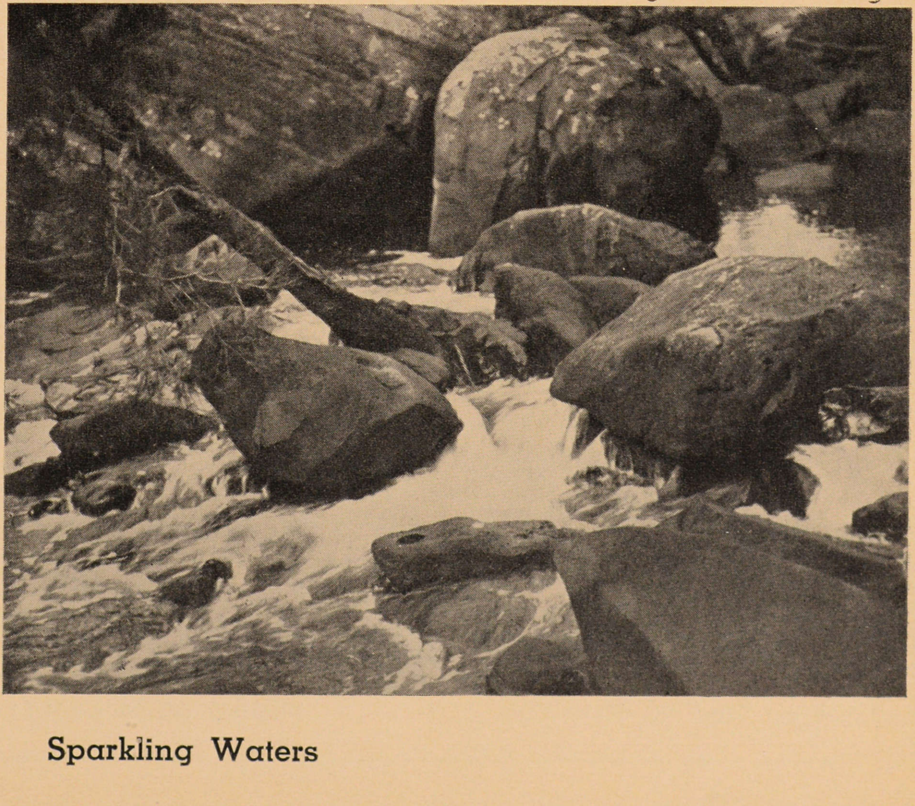
JOSEPH S. FRIEDMAN, prominent photographic chemist of Irvington, N. J., has joined the Research staff of Agfa Ansco, America's oldest manufacturer of photographic products, according to a recent announcement made at the company's main offices in Binghampton, N. Y.

Dr. Friedman, who received his Ph.D. degree from Harvard University in 1921, is a popular writer and experimenter in the field of color photography. As a member of the Agfa Ansco Color Research Department he will be engaged in the further development of Ansco Color Film and Ansco Color Paper.

A member of the American Chemical Society and the New York Academy of Science and a fellow of both the American Institute of Chemists and the American Association for Advancement of Science, Dr. Friedman has played an important role in the development of numerous color reproduction processes and has made important contributions to the science of photographic chemistry.

In 1928 he conducted, with Edwin Land, the fundamental research in the field of polarized light which was the basis for patents later used by the Polaroid Corporation.

Anglers



Sparkling Waters

Diary of a 10-Year Movie Maker

(Continued from Page 403)

Movies take on new sparkle with this fine precision instrument. Much of my time now will be devoted to re-editing odd scenes which hadn't been brilliant enough with the old outfit . . . lucky thing I've saved those old films!

1940

Many very fine professionally made movie subjects are now on the market . . . and best of all, at reasonable prices. They're just the thing to round out a home movie program, and the quality is excellent! A complete variety of selections are available in 8mm., 16mm. silent and 16mm. sound editions. I for one am glad that some far-sighted individuals have awakened to the fact that there's a demand for these really modern pictures . . . who wants to look at those old fashioned reductions made from 20-year-old 35mm. releases, heretofore available?

Other alert individuals are forming rental libraries whereby the latest prints can be rented at a very nominal cost. Those who do not care to purchase the subjects outright may still enjoy them by taking of one of these libraries.

Still others offer an exchange service wherein the first reel is purchased outright at the regular rates and may be exchanged later at any time for a completely different one. The new film, in turn, then become the property of the customer for as long a period as he desires to keep it. In this manner the movie addict always has possession of a choice subject. The charge for this service is, likewise, usually very reasonable.

1941

Strangely enough, I'm making my first serious attempt at indoor movies . . . and after all this time! Can't understand why I haven't tried this before, because it's simplicity in itself . . . supersensitive film . . . two or three photofloods in reflectors . . . a 10 cent exposure guide and a firm determination. Results are surprising!

I've now decided to venture forth and try my success in the way of outdoor NIGHT movies. A brightly lit central business district is the ideal subject which, in my case, is Chicago's Loop. Even my *f*:3.5 lens stop proves ample for such scenes. Several shots filmed at 8 frames per second are even better, but action is speeded up ridiculously.

Something else has taken my fancy recently . . . the processing end of the game. It's only natural that a real movie fanatic should be a little curious about what goes on after his films are rushed to the finishing lab. Of course I can't hope to compete with the professionals, but at least I can experiment in developing shorter lengths of film . . . that new developing rack I bought is just the thing! Besides, I'm already familiar with darkroom work, and fundamentally the principles involved are the same as in still photography.

This certainly looks like an eventful year!

1942

I think last year more was accomplished than in any previous period. I dabbled in just about everything . . . took more Kodachrome than ever before . . . learned many new tricks of the trade and gained the most prized reels of all my movie making activities. The importance of using some sort of a script and the ability of organizing one hastily are now prime requisites. Sometimes conditions are such that a previously prepared script is impossible, in which event, one must learn to recognize good continuity instantly while "on location". This calls for fast thinking and usually takes considerable training, but isn't really difficult.

Much of my time is now being spent making "stills" from my favorite movie scenes. The addition of a special enlarger to my equipment makes this possible. The advantage here is that the film doesn't have to be cut . . . any choice frame may be enlarged, and there certainly is a choice on a movie film! With the film clamped in a special "gate", the enlarger, which resembles a folding camera, is exposed to a bright lamp, thereby forming a negative image of the movie frame on a regular roll film. This enlarged negative can then, in turn, be used to make a photographic print either by contact or further enlargement.

It's fascinating work . . . and it IS nice to have "stills" from favorite movies to pass around!

1943

War restrictions on photographic supplies are playing havoc with movie making aspirations this year. With more and more equipment being rationed or production being drastically reduced for civilian consumption, the ciné fan has to be more conservative than ever. They say that money talks, but there are times when even money cannot replace a broken lens, a defective exposure meter or a burned-out photoflood lamp. Film, though sharply curtailed, is still available for occasional use. Owners of the magazine load cameras will find their film type unobtainable most of the time, however.

This all means that each foot will have to go further than ever before. Every expoure should be checked and rechecked before it's too late . . . every scene should REALLY be worth the footage devoted to it. Discretion must be used, too, in war-time filming . . . many good subjects are taboo.

Time sure flies! It seems incredible that so MUCH time has elapsed since I first cast an eager eye towards a ciné camera, anxiously peered through the viewfinder, and hopefully pressed the

(Continued on Page 421)

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Lapse-time for the Amateur

(Continued from Page 397)

A Practical Application

If you are prone to be practical try a practical experiment. It is said that photoflood bulbs, like people, become weak in their old age. Here's an experiment that will tell the story . . .

Place an exposure meter in front of a gray card that is directly illuminated by a No. 1 photoflood bulb. Bring the light close enough to the card to allow the meter to show a fairly high reading. Bring a small clock into the picture, placing it near the meter and set its hands at twelve o'clock. Adjust the lapse-time camera for an extreme close-up of the meter and clock, and set the interval timer for two exposures per minute. After taking a light reading start the camera on its first exposure and also start the clock. For this experiment the light must remain on constantly as it supplies the necessary illumination as well as being the guinea pig for experimental purposes.

Since the average life of a No. 1 photoflood is approximately two hours, this sequence will use about six feet of film. Thus the life span of the bulb can be screened in about fifteen seconds, its exact length in hours and minutes being shown by the clock and the intensity of its illumination all through its life, will be indicated by the reading shown by the meter.

A newsreel firm made a practical application of lapse-time photography in showing the progress made in righting the capsized steamship Normandie.

Entomologists and nature lovers will find enough subject matter to keep their lapse-time cameras clicking full time. The building of ant hills, cocoons and other insect habitats are only the beginning. Each subject presents its own lighting and time-lapse problem, but is generous in its reward when completed and projected.

The results obtained by the amateur who works with lapse-time depend entirely on the extent to which he cares to delve into its possibilities. This extent need not be limited by expensive equipment, as shown in the foregoing paragraphs, but by the ingenuity of the individual making the experiments. When you start lapse-time photography there is no limit. You will never be satisfied. Each set-up will make you want to do the next one a little different, and you will consistently make improvements with each trial. It will work on you like a drug and as a result of your all out effort you will produce movies with an allure that you have never experienced before.

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Don't forget to visit your nearest Blood Bank. A pint of YOUR blood may save a Life —GIVE.

Improving Amateur Projection

(Continued from Page 411)

the film, you are keeping a watch out for them on the screen. When they appear they serve as your "cue" to commence closing off the lens. Should you accidentally "miss your cue," however, the opaque trailer at the film end will still save you from running off on to a clear screen.

PHOTOS AT ONE-MILLIONTH SECOND EXPOSURE CLAIMED

PHOTOGRAPHS with an exposure of but one-millionth of a second, brief enough to stop a rifle bullet or any fast-moving object, can now be made by a new high speed electronic light equipment developed by engineers in General Electric's laboratory, the company has announced.

This device, using a small mercury lamp no bigger than a cigarette, consists of a small portable box, 10 inches square and weighing less than 20 pounds. On the front is the light source, resembling a small auto headlight, which can be operated manually by means of a push button, or automatically by electrical contacts or a phototube and preamplifier. It will illuminate 20 square feet of area with sufficient intensity to photo the fastest moving objects, in fact in tests has "stopped" a wheel revolving at 70,000 revolutions per minute.

Fastest camera shutters of the usual type, with blades moving between the lens elements, ordinarily operate at a minimum of 1/300th second. Focal plane shutters, consisting of slits in a curtain moving immediately in front of the film, cut this down to 1/1200 second. Recently published high-speed photographs of athletes, etc., have been made with a lamp giving exposures of 1/30,000 second, but 1/33 as fast as the new G-E unit.

The new device uses standard and easily replaceable electrical parts and a single electronic tube, with a 100-watt Mazda mercury lamp as the light source. Such a lamp is now used as a high-intensity light for illuminating airports, television and motion picture studios, and for other purposes. Its brightness in such installations is one-fifth of that of the sun's brightness.

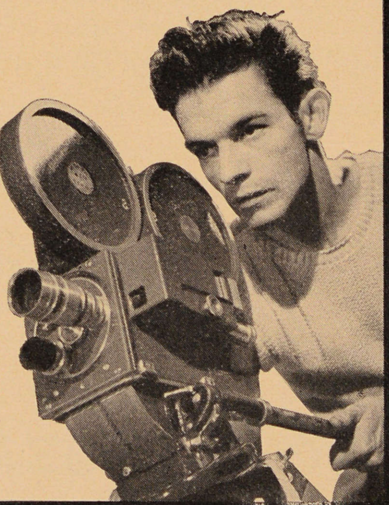
The ordinary 115-volt a-c household lighting circuit is used to operate the unit. The current is rectified by an electronic tube and then used to charge a capacitor, really an electrical storage tank. In three seconds enough power is accumulated to operate the lamp at full flash intensity.

At approximately 2000 volts and 2000 ampers, it reaches a maximum of some 4,000,000 watts. Since current flows for only about a millionth of a second the total energy in each flash is very slight. It is only enough to light a 40-watt lamp for a tenth of a second.

"Because of the pressure of war work, for which the unit was made, we have not been able to experiment fully with many fast-moving objects," according to S. Lawrence Bellinger, who was active in its development. "Rather we have confined our efforts to using the device for studying high-speed machinery, such as turbine and supercharger parts.

"The small mercury lamp has a lifetime of but one second, but despite this brief period it will last the ordinary newspaper photographer 500 years, for it is good for 1,000,000 exposures."

Mr. Bellinger, 27 years old, was born at Glens Falls, N. Y., and attended Cornell University. He served as a photographer for the War Department in the Canal Zone before he joined the G-E General Engineering Laboratory in December, 1941.



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FROM SCRIPT TO SCREEN

New Filmosound Releases

THE Bell & Howell Company have announced the following two new releases of the Filmosound Library.

"Saboteur" (Universal), 11 reels; Priscilla Lane, Robert Cummings, Otto Kruger.

Alfred Hitchcock's most significant screen achievement, stars Priscilla Lane and Robert Cummings. A timely story of wartime America and dramatized in one man's conflict with enemy agents. A young aircraft factory worker, falsely accused of sabotage, tracks down the real saboteurs. Fast-moving plot, in five days its characters speed across thirteen states. Available, for approved non-theatrical audiences.

"Hell Below Zero," sound, 10 min.

A blinding snowstorm in equatorial Africa is one of the thrills of "Hell Below Zero," a one-reel black-and-white film photographed and narrated by Carveth Wells, world-famed traveler. The little known "Mountains of the Moon," photographed for the first time.

Cinematographers Responsible For Agents' Success

(Continued from Page 399)

sence. Hollywood wondered what she would look like, for everybody knew she was a lot older than when she last was seen as a perfact example of glamour. Well, she is still beautiful and glamorous on the screen, but it was the art of a cinematographer that brought it about. I wonder if the star and her agent realize this. I wonder if they have shaken that cameraman's hand and thanked him. The star probably has, but I'll bet the agent hasn't. Without a doubt he thinks that it was his own work that put the woman back on the screen.

Cameramen have meant a great deal to me in bringing new faces to the screen, particularly in the last year and a half. Through their artistry in making screen tests I have signed Kim Hunter to a contract with David O. Selznick; Louise La Planche to Paramount Studios; Rosemary La Planche to RKO Studios and Jeanne Newport to Charles R. Rogers. Peggy O'Neill, under contract to Charles R. Rogers, was one of the few newcomers I have ever signed without a screen test. I was surprised when Mr. Rogers handed me a contract without giving her a test, but he told me that he had enough faith in Hollywood cameramen and their art not to bother with a test as long as the girl looked photogenic to him. "Don't worry about how she will look on the screen," Rogers said, "Our cameramen will take good care of that."

Very shortly now I will be depending upon the cameramen again, for I have two more new girls I am planning to introduce to the screen. They are Early Cantrell and Laurie Hayden. Miss Cantrell has dark auburn hair. Miss Hayden is a blonde. I discovered Miss Cantrell at the Pasadena Community Playhouse where she was giving an outstanding performance. Miss Hayden is playing the leading feminine role in "One in Every Family" at the Pasadena Playhouse laboratory theatre at this writing. I am certain they will both secure contracts in films, for I have faith in them and I have faith in the cameramen who will make their tests that are coming shortly. Cinematographers, I thank you.

Santa Fe Films

The Princeton Film Center has been named distributor of the Santa Fe Railway's two new 16mm. color motion pictures, "Loaded For War" and "Tank Destroyers." They are available by writing to Princeton Film Center, Princeton, N. J.

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WIN U. S. WAR BONDS FOR YOUR IDEAS ON *Tomorrow's* 8MM MOVIE CAMERA & PROJECTOR

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From these experienced groups are bound to come important, practical contributions to the over-all design and mechanical improvement of postwar's 8mm equipment—but the amateur and the "home tinkerer" are certain to have IDEAS—ideas that may revolutionize an industry!

What do YOU want in the next motion picture camera YOU buy? How do YOU think it should look? Load? Operate?

What do YOU want in YOUR postwar motion picture projector? How can its operation be simplified, perfected? Have you an idea as to YOUR projector's appearance that you believe has merit and appeal?

It is YOUR answers to these questions, in rough sketch or finished drawing—with or without supplemental explanation, as you may desire—that DeVRY is looking for.

It is the USER's desires—whether you be professional, amateur, or just a "tinkerer with an idea" that will share these $1500.00 War Bond awards.

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DESIGN: Submit your Ideas—*in rough or finished drawing*—as to how you think the new 8mm MOTION PICTURE CAMERA OR PROJECTOR should look. Supplement designs with brief comments. Enter as many drawings as you wish.

MECHANICAL OPERATION: You may submit working models, mechanical drawings, rough sketches. *The idea is the thing*—how to simplify, improve, perfect either camera or projector operation—for instance:

PROJECTOR: Ventilating system (lamp house); optical system; film movement; reel arms; tilting device; film safety devices; take-up, framing, focusing and shutter mechanisms, etc. Can you suggest particular developments of these features?

CAMERA: (single or turret lens mount) view finder; shutter, footage indicator; loading mechanism; winding key; exposure guide; lens mount; focusing; single frame release mechanism, etc. How do you think these can be simplified, perfected?

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Griffis Advises 'Russia' For Public

Stanton Griffis, new chief of the OWI motion picture bureau, has strongly recommended to the WAC that the Col. Frank Capra film, "Battle of Russia," be released for public showings, and it is very likely that his advice will be followed.

BUY MORE BONDS

Naval Technicians Supervise Optical Movies

Motion picture on "Fine Grinding," third of series under production at Bell & Howell Chicago plant for training of optical craftsmen, being supervised by representatives of the Navy and U. S. Office of Education. Standing, left to right: Lyle F. Stewart, field supervisor for U. S. Office of Education; Lt. Comdr. W. W. Williams, Prof Neil F. Beardsley, Comdr. E. B. Oliver, Lt. H. E. Carr, Lt. C. C. Pierce, Lt. J. D Cassidy. Seated: Wm. F. Kruse, writer and director of the series.

A SERIES of visual education units, on "Optical Craftsmanship," each consisting of a ten- to fifteen-minute 16mm. sound motion picture, a 35mm. film strip and a sixteen-page learner's manual, has just gone into production, under the joint auspices of the Navy and of the United States Office of Education.

Commander E. B. Oliver, of the Bureau of Ships, Navy Department, with several other officers, visited the new Bell & Howell optical plant in Chicago, to consult on the progress of the films being produced by the company, as part of this project. He saw the third of the series, "Fine Grinding," under the cameras. General photography on two, "Finger Grinding" and "Pin-Bar Grinding," has already been completed. Other units being made at the Bell & Howell plant include "Pitch Buttoning and Blocking," "Polishing" and "Centering and Cementing." The films dealing with spherical surfaces will be made at the Chicago plant, those on flats and prisms will be made in New York.

In answer to a question as to why this field was being fostered so extensively, Commander Oliver explained that outbreak of the war has made imperative the immediate large-scale expansion of American production of precision optics. "Optics are the 'eyes of the Navy,' and you can't fight very well without eyes," he said. Every manufacturer he had approached to take on the production of naval optical devices complained of lack of skilled manpower. There was, furthermore, practically no material available for the training of the new unskilled hands that had to be drawn by the thousands into the infant industry.

"In the Navy itself, we are now teaching just about everything by means of 16mm. motion pictures," the Commander continued, "from tying knots to swimming, so why not teach optical craftsmanship by means of such visual aids?"

The U. S. Office of Education reached the same conclusion. After consultation with the War Manpower Commission, it was decided to add this vital new field of manpower training to the machine-shop, shipbuilding, welding and other crafts in which the USOE films have rendered noteworthy aid.

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Invaders Learn to Surrender

(Continued from Page 400)

the paraphernalia of a century-old theatrical tradition—we feel that he plays. In America he does not play, he acts most naturally, unencumbered, unsophisticated—we feel that he is himself.

Life, atmosphere and education in our country inoculates this "natural" art, obvious, if I may say so, already in the American screen child's performance.

Another striking difference of film conception between the two worlds is our sense of humor. A divine gift of America's people, unparalleled on this globe, deeply wholesome in its beneficiency, healing wounds like the soft caressing hand of a doctor magician. European humor is entirely different—where it springs onto the surface of life and art, it is sharp, whipping, often bitter as acid, full of sarcasm and ailing irony. This may be the explanation of the fact that American humor has swept all over the world like a torrential flood.

In Europe, educational systems are in big style. We have less of them, but we know that our movie is a gigantic medium of expression for our healthy American spirit. We believe that we should give our youth the courage to meet life's struggles, with the assurance that honest effort is not futile, and that the power of good is victorious in the end. This is the attitude of our democratic nation. We are loyal and tolerant to the opinions and actions of others, but we don't wish that defeatism of life dominate our films.

European films paint life with deep resignation. In our nature, optimism is the fundamental view. Things don't get us down so easily—chin up—regardless. And that is what will help us win this war, too.

And it will be our American films that will lighten the screens of Europe on her convalescent but peaceful tomorrow!

Electronics In Photometry

(Continued from Page 404)

The method is to pass the film in the roll past a point at which is located means for scanning the film in a direction at right angles to its direction of motion. The scanning beam consists of infra-red radiation or any radiation to which the emulsion is insensitive and to which a photo-cell will respond. The radiation from the scanning beam is picked up by a photo-emissive cell, with which is preferably associated an electron multiplier, and is further amplified if necessary. In regions where the film has no faults the output is constant, but should a fault be traversed by the scanning spot the small change in illumination of the photo-cell is passed on as a pulse to the amplifier which finally operates a thyratron circuit which in turn triggers a relay. The relay may then perform anything required, e.g., stop the machine, punch the film or give audible warning. A variety of electronic circuits can be used as accessories, for example to prevent the scanning spot from running over the edge of the film and thus recording a major fault!

In practice this method of examining film proves greatly superior in sensitivity to the human eye. The eye can just detect a black circle stuck on a piece of film, the photo-electric examining machine will detect a short, faint pencil line drawn on the emulsion surface.

Records on Microfilm

OVER 85 miles of microfilm in a fire and bombproof vault now preserve the maps, records and deeds accumulated since 1852 in the Los Angeles County recorder's office, the largest of its kind in the world. The reels of microfilm require only three per cent of the space needed for the original documents.

Miss M. Beatty, recorder of the Los Angeles County office, reports that the cameras took over 7,000,000 individual exposures. In all, 13,186,056 pages of documented material — including 25,000 maps—were microfilmed. Over 450,000 feet of Du Pont Safety Micro-copy film was used on the project.

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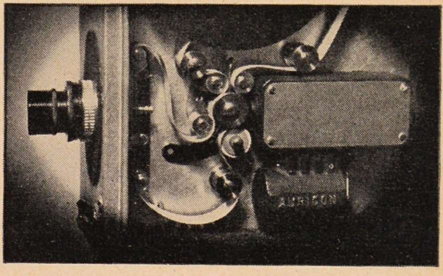

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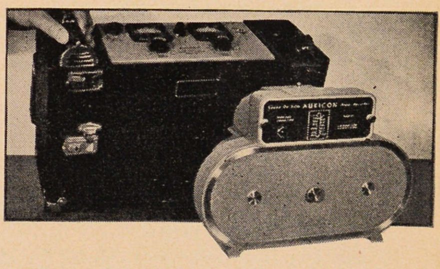

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American Television Uses Canada Pix In Programs

FOR the first time in American television, Canadian documentary films are being seriously televised on a large scale by radio networks in the United States, the National Film Board announced.

CBS has recently televised "Peoples of Canada." Canadian documentaries selected for television by the National Broadcasting Company are "Road to Tokyo," "Hot Ice," "Forward Commandos," "Mask of Nippon" and "Quebec, Path of Conquest."

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Diary of a 10-Year Movie Maker

(Continued from Page 414)

exposure button. Since then, many fleeting moments of pleasure have been permanently recorded . . . to be re-lived at any time on the screen. All the time and effort spent in making these movies is well repaid in viewing once again those never-to-be-forgotten scenes.

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S.M.P.E. Holds 54th Semi-Annual Conference

THE 54th Semi-Annual Conference of the Society of Motion Picture Engineers was held in Hollywood on October 18, 19, 20, 21 and 22. Technical papers were presented by experts on practically every phase of motion pictures.

Among the papers presented were: "The Flat Spiral Reel For Processing 50-foot Lengths of 35mm. Film," by C. E. Ives and C. J. Kunz of the Eastman Kodak Company; "The New Acme-Dunn Optical Printer," by Linwood Dunn of RKO Pictures; "A High Speed Method of Controlling Kelvin and Light Intensity for Motion Picture Printers," by Prof. Irving E. Dyatt, Oregon State College; "The New DuPont Photo Products Control Laboratory," by William P. Hillman, E. I. DuPont de Nemours & Co.; "Like This," by Lt. Commander Patrick Murphy, Chief of Visual Training Section, U. S. Coast Guard, Washington, D. C.; "A New Studio and Location Recording Unit," by J. L. Fields, RCA-Victor Division, Radio Corporation of America, Hollywood.

Also a symposium on the Paramount Color Still Background Projection System in which three papers were presented: "Duplication of Kodachrome Original, with Enlargements, Reduction and Color Correction," by Earle Morgan and Roy Peck of Paramount Pictures; "Transfer of Kodachrome Emulsion to Lantern Slide Glass," by Barton H. Thompson of Paramount, and "High Efficiency Stereoptican Projector for Color Background Shots," by Farciot Edouart, A.S.C., of Paramount.

"What To Expect of Direct 16mm.," by Lloyd Thompson, vice-president of the Calvin Company, Kansas City; "16mm. Color to 35mm. Black and White," by Carroll Dunning, Dunningcolor Corporation, Hollywood; "Improvements in 16mm. Equipment," by Lt. Commander Alfred Gilks, Office of Strategic Supplies, Field Photographic Branch, Navy Department; "Post-War Television Planning and Requirements," by Klaus Landsberg, Television Productions, Inc., Hollywood; "Cunningham Combat Camera," by H. G. Cunningham; "Monopack Processes," by Joseph S. Friedman, American Photography, Binghamton, N. Y.; and many other papers dealing with sound and laboratory and problems of the armed services.

Pix For Better Vision

ENGLISH night fighters in the war zones are reported to have been ordered to see at least two pix weekly in order to condition their eyes, according to Capt. Kuttenwascher who visited Warners recently. British government optometrists have found that the combination of darkness and intent watching of visual images is ideal for the eyes for the work demanded by night bombing expeditions.

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Of The American Cinematographer, published monthly at Los Angeles, California, for October 1st, 1943.

State of California } ss.
County of Los Angeles }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Hal Hall, who, having been duly sworn according to law, deposes and says that he is the Editor of the AMERICAN CINEMATOGRAPHER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, A.S.C. Agency, Inc., 1782 No. Orange Drive, Hollywood 28, Calif.; Editor, Hal Hall, 1782 No. Orange Drive, Hollywood 28, Calif.; Managing Editor, Hal Hall, 1782 No. Orange Drive, Hollywood 28, Calif.; Business Manager, Marguerite Duerr, 1782 No. Orange Drive, Hollywood 28, Calif.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) A.S.C. Agency, Inc., 1782 No. Orange Drive, Hollywood 28, Calif., a non-profit corporation wholly owned by the American Society of Cinematographers, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Officers of the American Society of Cinematographers, Inc., are: President, Leonard Smith, 1782 N. Orange Dr., Hollywood 28, Calif.; First Vice-President, Charles G. Clarke, 1782 N. Orange Dr., Hollywood 28, Calif.; Second Vice-President, Arthur Edeson, 1782 N. Orange Dr., Hollywood 28, Calif., Third Vice-President, Joseph Walker, 1782 N. Orange Dr., Hollywood 28, Calif.; Secretary-Treasurer, Byron Haskin, 1782 N. Orange Dr., Hollywood 28, Calif., Executive Vice-President and Business Manager, Fred W. Jackman, 1782 N. Orange Dr., Hollywood 28, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve month preceding the date shown above is........ (This information is required from daily publications only.)

(Signed) HAL HALL, Editor.

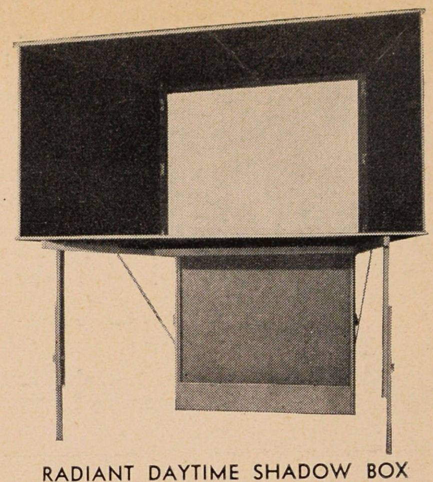
Sworn to and subscribed before me this 8th day of October, 1943.
(Seal) OLIVE M. BERREAU,

Notary Public in and for the County of Los Angeles, State of California.
(My commission expires August 6, 1944.

Many Army Bids In For "Disney" Victory

Impact of Walt Disney's "Victory Through Air Power" is being felt in high military circles throughout the globe, as indicated by the number of requests for prints being made to the Disney Studio. Technicolor today is rushing through a 16 mm. print requested by the U.S. Army Pictorial Service overseas, "to be used for important military purposes."

Air Marshall Sir Sholto-Douglas, with headquarters in the Middle East, will shortly receive a print, at his request, for showing to Admirals of the British Navy and top military leaders in the Middle East Theatre. British Air Ministry wants the picture for its historical records and to show it at the Royal Air Force Staff College, where courses are held for senior officers. Wherever possible, the Disney Studio is cooperating with the armed forces of the Allies.



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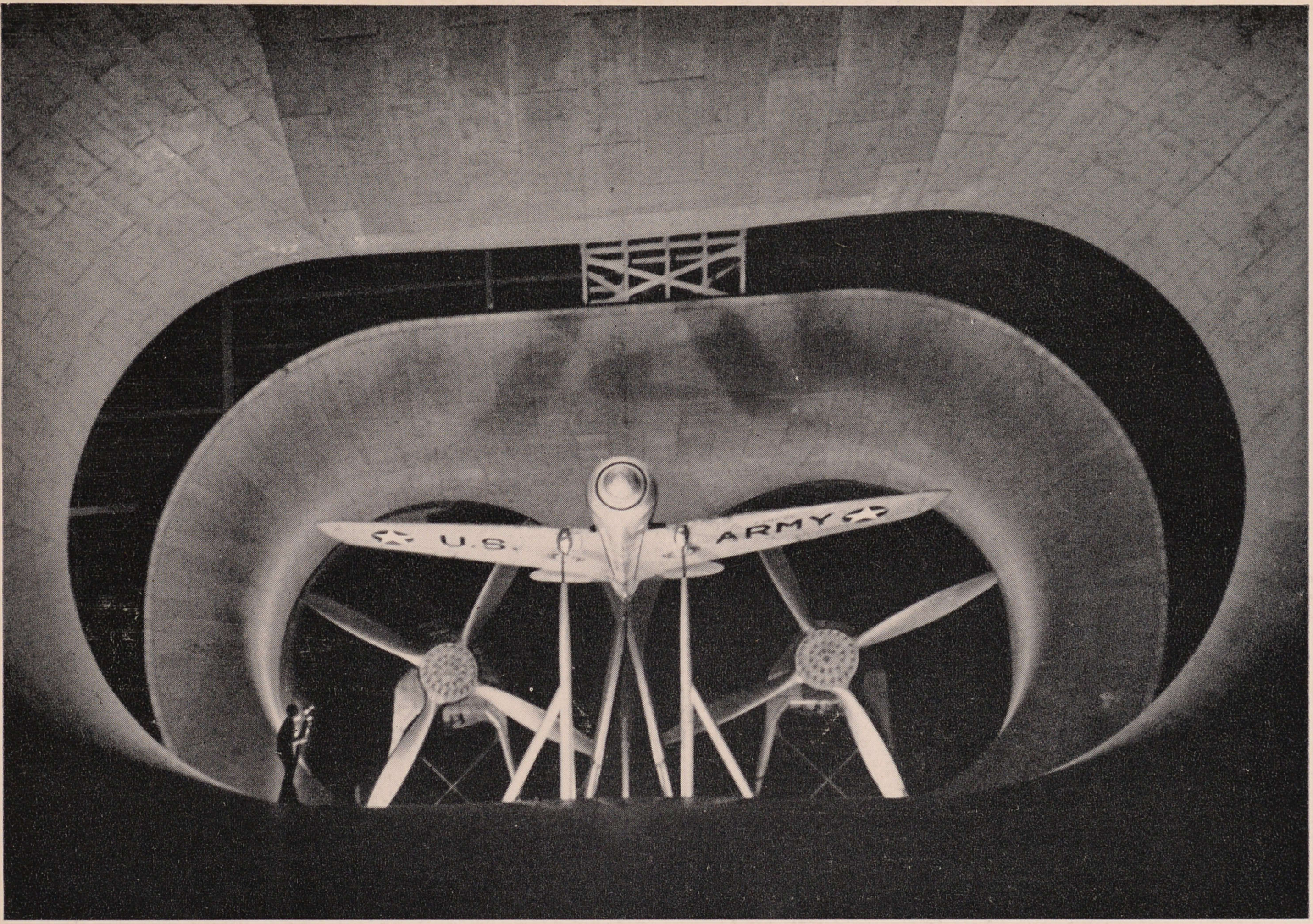
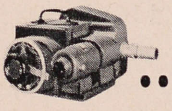


BASIC AERONAUTICAL RESEARCH in the laboratories of the National Advisory Committee for Aeronautics at Langley Field, Va., uses Ciné-Kodak to study airfoils and air currents—through "smokeflow movies" made in wind tunnels—and fuel combustion in aircraft engine cylinders. These movies, showing what the eye can't see, lead to design refinements—in aircraft and engines—which "pay out" when the guns begin to chatter or the bombs find their mark.



KEY TO SECRET WEAPONS ... *a movie camera—*

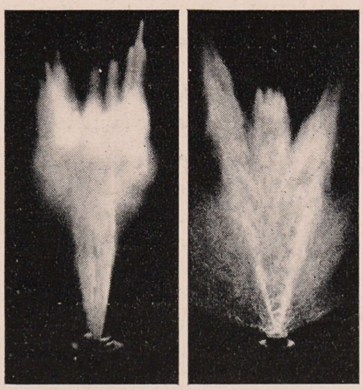
Ciné-Kodak —*which stretches split-seconds into minutes*

"WORKING BLIND" . . . trying to improve a plane or gun or projectile which moves so fast you can't see it . . . is necessarily a slow, fumbling business. In time of war, not good enough . . .

Fortunately, back in 1932, Kodak made available to our best engineering and scientific brains a new kind of eye . . . which could *see* what goes on at blinding speed in our mechanized, electrified world.

This eye was a movie camera for taking thousands of pictures *a second*—which could then be shown at normal movie speed of 16 pictures a second. It "magnified time." In the resulting movies, action which had actually occurred in a split-second was stretched into minutes.

Research scientists used these cameras to help develop faster airplanes, more powerful motors. And, with the approach of war, to find out why a machine gun "jammed"—and fix it; to "take the bugs out" of the recoil mechanisms of bigger guns; to pack a more effective "train of fire" into a contact bomb . . . examples are numbered in hundreds.



NOT "OLD FAITHFUL," but "stills" enlarged from movies made at 2500 pictures a second, showing the comparative efficiency of two designs in fuel injection jets. The superior distribution of fuel from the jet at the right—invisible without the movies—is the type of small improvement which helps our men write America's fighting record in the air.

Your 16-mm. home movie Ciné-Kodak was the "jumping-off place" in designing Eastman's super-speed movie camera, which takes 3,000 pictures a second—the film streaking through at over 50 miles an hour. The "shutter" is a spinning "prism"—speed 90,000 r.p.m.

At this incredible speed, this Ciné-Kodak makes good movies—with standard 16-mm. films, Kodachrome included, and has become a most effective military tool . . . Eastman Kodak Co., Rochester, N. Y.

REMEMBER MAJOR HENDERSON? . . . *how Major Lofton Henderson, USMC, flew his crippled bomber right down onto the Jap carrier's deck? And how his name was given to that bomb-scarred field on Guadalcanal? It is a stern example for us at home.*
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The Browns are sailing a PIRATE ship tonight!

THEY'RE signing on with "Captain Caution." It'll be a dangerous voyage, full of dark intrigue . . . and they'll love every minute of it.

That's the grand part of owning a Filmosound Projector . . . and of having the B&H Filmosound Library at your command. They'll turn your familiar living room into a sea-lashed pirate ship or a musical comedy stage . . . a concert platform or a football gridiron . . . an African jungle or a Norwegian fishing village.

For among the thousands of films waiting for you in the Filmosound Library are *travel movies . . . historical films . . . sport shorts . . . cartoon comedies . . . Hollywood features* like "Captain Caution," "Saps at Sea" starring Laurel and Hardy, and "Riders of Death Valley," the good old hard-riding "cliff-hanger" (serial to you) that everybody enjoys.

Send for the Filmosound Library Catalogs and make the most of your Filmosound. Home Movies are great for the important relaxation that helps you do your daily job better. Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Est. 1907.*

"SAPS AT SEA" starring Laurel & Hardy in a series of sidesplitting adventures. It's a Universal Picture now available from the Filmosound Library for showing at approved non-theatrical locations.

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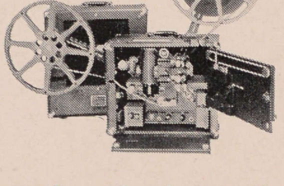

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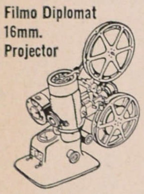

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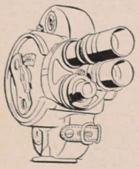

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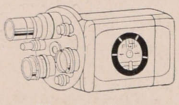

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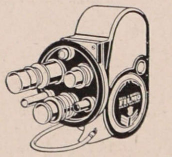

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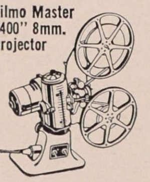

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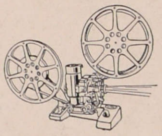

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